

Fixed Ground Antenna Radome (FGAR) Type II Operational Test and Evaluation (OT&E) Operational Test (Rockville Beacon Only Site (BOS)) Final Report

Leonard H. Baker

March 1996

DOT/FAA/CT-TN96/9

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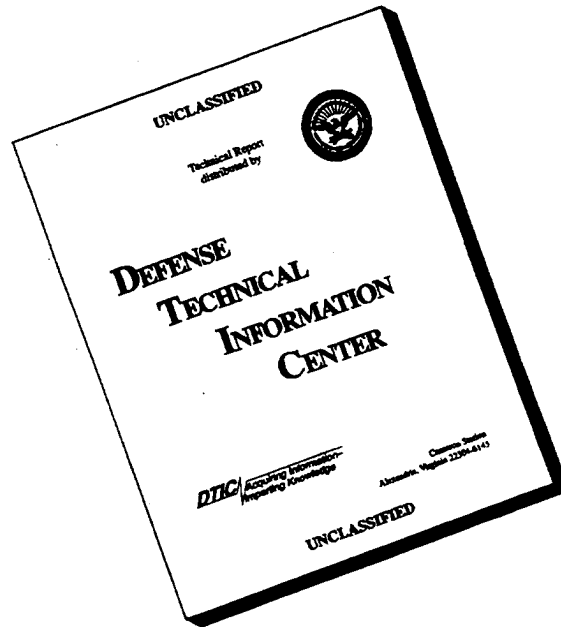


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16. Abstract <p>This report documents the Operational Test and Evaluation (OT&E) Operational testing performed on the Type II, Fixed Ground Antenna Radome (FGAR) First Article. The Type II FGAR is used at Mode Select Beacon System (Mode S) and Air Traffic Control Beacon Interrogator (ATCBI) beacon only sites (BOS).</p> <p>This testing was performed on the Federal Aviation Administration's (FAA) Central Region's Rockville BOS Facility (QJM), Nebraska (NE). The testing was limited to electromagnetic performance characteristics evaluation. In conjunction with the FGAR installation, the ATCBI-5 was replaced with a Mode S.</p> <p>Electromagnetic performance data was collected for evaluation by the Minneapolis (ZMP), Denver (ZDV), and Kansas City (ZKC) Air Route Traffic Control Centers (ARTCC). The testing showed no degradation of the antenna electromagnetic patterns. The testing determined that the FGAR meets the Operational Suitability and Operational Effectiveness requirements of the FAA.</p>			
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EXECUTIVE SUMMARY

The Type II Fixed Ground Antenna Radome (FGAR) is being deployed at sites with three different equipment/antenna configurations. Due to the length of time between the deployment at the three different type of sites, the test reports will be issued incrementally.

Operational Test and Evaluation (OT&E) Operational testing of the Type II FGAR First Article was performed at the Rockville, Nebraska (NE) Beacon Only Site (BOS) [QJM]. The testing was limited to electromagnetic performance characteristics evaluation and performed during the period October 1 to November 21, 1995.

In conjunction with the FGAR installation, the Air Traffic Control Beacon Interrogator (ATCBI)-5 was replaced with a Mode Select Beacon System (Mode S). This resulted in the testing being performed with two different system/antenna configurations.

Electromagnetic performance characteristics testing was accomplished by collecting data at the Minneapolis (ZMP), Denver (ZDV), and Kansas City (ZKC) Air Route Traffic Control Centers (ARTCC). The ARTCC Technical Support Staff (TSS)/Service Management Operations Center (SMOC) engineers analyzed the data using their Quick Analysis of Radar Sites (QARS), Beacon False Target Analysis (BFTA), Common Digitizer Data Reduction (COMDIG), and Range, Azimuth, Radar Reinforced Evaluator (RARRE) programs, which are run on the ARTCC HOST Computer System (HCS). In addition, a flight check was performed to commission the Mode S. The testing showed the electromagnetic performance characteristics of the secondary radar, following the FGAR installation, were slightly improved.

In conclusion, OT&E testing determined that the Type II FGAR meets the Operational Suitability and Effectiveness requirements of the Federal Aviation Administration (FAA). The Type II FGAR is ready to be integrated into the National Airspace System (NAS).

1. INTRODUCTION.

1.1 PURPOSE.

The purpose of this report is to provide the results of the Operational Test and Evaluation (OT&E) Operational testing performed on the Type II Fixed Ground Antenna Radome (FGAR) First Article, installed at the Rockville, Nebraska (NE) Beacon Only Site (BOS) [QJM].

1.2 SCOPE.

OT&E Operational testing of the Type II FGAR is divided into three phases. This is being done because the Type II FGAR will be installed at sites with three different equipment/antenna configurations. These configurations and their locations are:

- a. Rockville BOS (QJM) - Air Traffic Control Beacon Interrogator (ATCBI)-5 and a Mode Select Beacon System (Mode S).
- b. Lihue, Hawaii (HI) [LIH] - Airport Surveillance Radar (ASR)-8 and ATCBI-4, with Air Traffic Control Radar Beacon System (ATCRBS) 5-foot planar array antenna.
- c. Samburg, Tennessee (TN) [QPB] - ATCBI-5, with ATCRBS 5-foot planar array antenna.

Due to the length of time between the installation at the three different sites and the fact that only the Rockville BOS (QJM) is considered to be a First Article, the test reports will be issued incrementally.

OT&E Operational testing at the Rockville BOS (QJM) was limited to electromagnetic performance characteristics evaluation. The Minneapolis (ZMP), Denver (ZDV), and Kansas City (ZKC) Air Route Traffic Control Centers (ARTCC) collected Rockville BOS (QJM) data using their HOST Computer Systems (HCS). Data were collected without a radome and again after the FGAR was installed and the facility returned to operational status. ARTCC Technical Support Staff (TSS)/Service Management Operations Center (SMOC) engineers then analyzed the data, using their HCS and available analysis programs.

The equipment/antenna configurations at the Rockville BOS (QJM) were changed during the testing period. The configurations and test periods were:

- a. Without A Radome.
 1. ATCBI-5, with ATCRBS 5-foot planar array antenna - 15 days.
 2. Mode S, operating in the ATCRBS mode, with ATCRBS 5-foot planar array antenna - 6 days.
- b. After FGAR Installation.

Mode S, operating in the ATCRBS mode, with Mode S back-to-back phased array antennas - 15 days.

The Central Region had a flight check performed upon completion of the FGAR installation to certify the Mode S. The flight check was not part of OT&E Operational testing, but the results are included in this report.

2. REFERENCE DOCUMENTS.

2.1 FEDERAL AVIATION ADMINISTRATION (FAA) ORDERS.

Order 6100.1C Maintenance of NAS En Route Stage A - Air Traffic Control System

Order OA P 8200.1 United States Standard Flight Inspection Manual

2.2 FAA SPECIFICATIONS.

FAA-E-2773b Fixed Ground Antenna Radome (Mode S Compatible)

2.3 OTHER FAA DOCUMENTS.

FAA-4306B-8H User's Manual - Common Digitizer Data Reduction (COMDIG) Program

FAA-4306F-3H User's Manual - Common Digitizer Record (CD RECORD) Program

FAA-4306M-6H User's Manual - Range, Azimuth, Radar Reinforced Evaluator (RARRE) Program

FAA-4306N-7H User's Manual - Quick Analysis of Radar Sites (QARS) Program

FAA-4306P-9H User's Manual - Beacon False Target Analysis (BFTA) Program

SPB-TRA-009 New Radar Analysis Software for the Transportable Radar Analysis Computer System

DOT/FAA/CT-TN93/17 Test and Evaluation Master Plan (TEMP) for Fixed Ground Antenna Radome (FGAR)

DOT/FAA/CT-TN95/23 Fixed Ground Antenna Radome (FGAR) Type I/III OT&E Integration and OT&E Operational Final Test Report

DOT/FAA/CT-TN95/53 Operational Test and Evaluation (OT&E) Operational Test Plan for Type II Fixed Ground Antenna Radome (FGAR)

DOT/FAA/CT-TN95/54 Operational Test and Evaluation (OT&E) Operational Test Procedures for Type II Fixed Ground Antenna Radome (FGAR)

2.4 FAA FIELD TEST REPORTS.

Area Operations Manager, Kansas City ARTCC (ZKC) AFS "Rockville (QJM) Long Range Radar Radome Replacement Evaluation." Report prepared for Associate Program Manager for Test (APMT), ACT-310B, November 29, 1995

Manager, Dakota-Minnesota SMO "Rockville BOS (QJM) Fixed Ground Radome (FGAR) Replacement Evaluation." Report prepared for APMT, ACT-310B, December 20, 1995

Manager, Rocky Mountain SMO "Collection of Data in Support of FGAR OT&E Operational Testing of the Rockville BOS (QJM)." Report prepared for APMT, ACT-310B, January 18, 1996

3. SYSTEM DESCRIPTION.

3.1 MISSION REVIEW.

The FAA program to implement the En Route Mode S resulted in a requirement to replace the existing radomes at en route radar and BOS facilities. The existing radomes are not physically large enough to accommodate the En Route Mode S back-to-back phased array antennas. The FGAR supplies optimal protection of the antennas from the outside environment while providing minimal degradation of the electromagnetic performance characteristics of the enclosed antennas.

3.2 TEST SYSTEM CONFIGURATION.

The Type II FGAR provides an optimal environmental enclosure for the Mode S back-to-back phased array antennas or ATCRBS 5-foot planar array antenna. The radome is capable of withstanding wind velocities of 150 miles per hour (MPH). They have an inside diameter of 35 feet at their widest point, and fit the standard beacon only antenna tower (ASR-8 tower).

The radome is supplied as a complete assembly, which includes:

- a. Radome base ring.
- b. Lightning Protection Subsystem (LPS).
- c. Zenith Service and Catwalk Access Hatches.
- d. Aircraft Obstruction Light(s) [AOL].
- e. Devices to monitor the state of the AOLs and the access hatches condition (open/closed).

3.3 INTERFACES.

The Type II FGAR interfaces both mechanically and electrically with the National Airspace System (NAS). A block diagram of the interfaces is shown in figure 3.3-1.

3.3.1 Mechanical.

The Type II FGAR base ring interfaces mechanically with the existing antenna tower platform.

3.3.2 Electrical.

The Type II FGAR interfaces electrically with the antenna tower/facility:

- a. Electrical system.
- b. LPS.
- c. Remote Maintenance Monitoring System (RMMS)/Environmental Remote Monitoring Subsystem (ERMS).

3.3.3 Interface Testing.

There was no OT&E Integration testing performed on the Type II FGAR. The FGAR/electrical interfaces were thoroughly tested during Type I/III FGAR OT&E Integration and Operational testing. The Type II FGAR interfaces were, however, tested during on-site acceptance testing as following:

a. Mechanical.

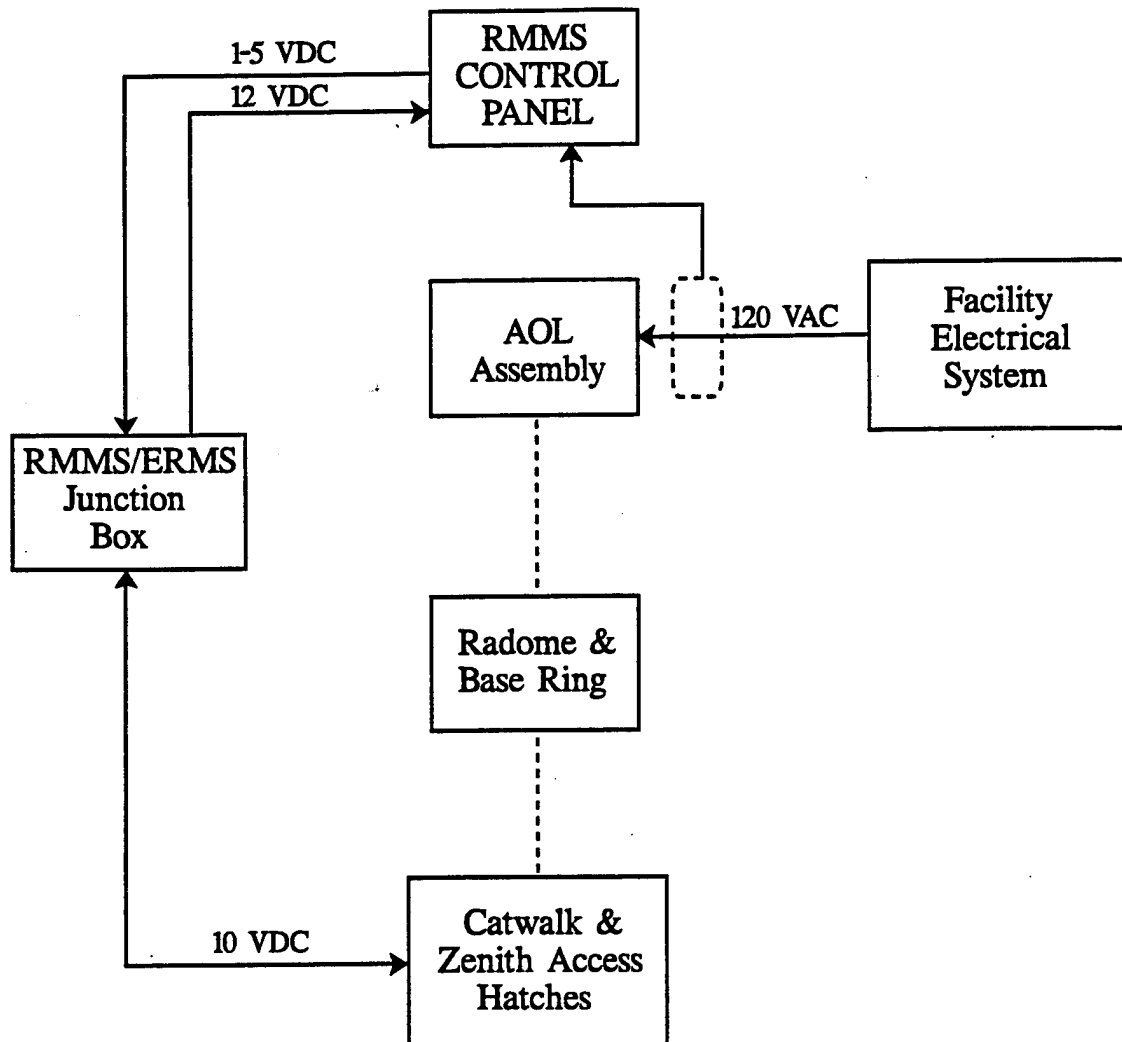
The mechanical interface between the Type II FGAR base ring and the antenna tower was verified.

b. Electrical.

1. The interface between the FGAR and the facility electrical system was verified.

2. The interface between the FGAR and the antenna tower LPS was tested.

3. The interface between the FGAR and the RMMS/ERMS could not be tested, since the ERMS has not been developed. The FGAR side of the interface, however, was tested.



LEGEND

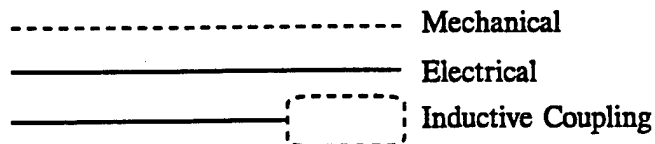


FIGURE 3.3-1 TYPE II FGAR INTERFACES BLOCK DIAGRAM

4. TEST AND EVALUATION DESCRIPTION.

4.1 TEST SCHEDULE AND LOCATIONS.

a. Test Schedule.

Testing was performed during the following periods:

1. Without A Radome.

- (a) ATCBI-5, with ATCRBS 5-foot planar array antenna - October 1 to 15, 1995.
- (b) Mode S, with ATCRBS 5-foot planar array antenna - October 16 to 21, 1995.

2. After FGAR Installation.

Mode S, with Mode S back-to-back phased array antennas - November 13 to 27, 1995.

b. Test Locations.

- 1. Minneapolis ARTCC (ZMP)
- 2. Denver ARTCC (ZDV)
- 3. Kansas City (ZKC)
- 4. Rockville BOS (QJM)

4.2 PARTICIPANTS.

The test participants included personnel from several different organizations. Appendix A contains a list of the individual test participants. The organizations participating in the testing:

- a. Minneapolis ARTCC (ZMP) TSS engineers
- b. Denver ARTCC (ZDV) SMOC engineers
- c. Kansas City ARTCC (ZKC) TSS engineers
- d. Rockville BOS (QJM) technicians
- e. Raytheon/ACT-310B engineer

4.3 TEST AND SPECIALIZED EQUIPMENT.

The following Government furnished equipment (GFE) and software were used to perform the tests:

- a. Minneapolis ARTCC (ZMP) HCS and the QARS, BFTA, COMDIG, RARRE, and CD RECORD programs.
- b. Denver ARTCC (ZDV) HCS and the QARS, BFTA, COMDIG, and CD RECORD programs.
- c. Kansas City ARTCC (ZKC) HCS and the QARS, BFTA, COMDIG, and CD RECORD programs.
- d. Rockville BOS (QJM) ATCBI-5 and Mode S systems.

The Minneapolis (ZMP), Denver (ZDV), and Kansas City (ZKC) ARTCCs were commissioned and certified operational facilities. The Rockville BOS (QJM) was a commissioned and certified facility during the test periods.

5. TEST AND EVALUATION DESCRIPTION.

The ARTCCs collect data from all radar and BOS facilities they interface with and use their HCS to: (1) analyze the data, using the QARS program, (2) record the data using the CD RECORD program, and (3) perform analysis on the data using specialized programs, when required. (See appendix B for a description of the programs.)

a. The QARS program output data are used to determine if the radar and BOS facilities data are usable for Air Traffic Control (ATC).

b. The CD RECORD data can be analyzed, using specialized programs, to resolve specific radar and beacon problems.

The Rockville BOS (QJM) supplies data to the Minneapolis (ZMP) [the controlling facility], Denver (ZDV), and Kansas City (ZKC) ARTCCs. These ARTCCs supported OT&E Operational testing by analyzing the QARS data without a radome and again after the FGAR was installed. In addition, the ARTCC TSS/SMOC engineers ran the BFTA, COMDIG, and RARRE programs on the CD RECORD data.

5.1 QARS PROGRAM TESTS.

5.1.1 Test Objectives.

The objective was to determine if there were any differences in the electromagnetic performance characteristics of the ATCRBS/Mode S beacon data being received by the ARTCCs, without a radome as compared with the FGAR installed.

5.1.2 Test Criteria.

The electromagnetic performance characteristics of the ATCRBS/Mode S beacon data, measured by the QARS program, were not degraded by the FGAR.

5.1.3 Test Description.

The Minneapolis (ZMP), Denver (ZDV), and Kansas City (ZKC) ARTCCs ran the QARS program on their HCS, using ATCRBS/Mode S data collected from the Rockville BOS (QJM).

The critical issue is: Does the FGAR degrade the electromagnetic performance characteristics of the secondary radar (ATCRBS/Mode S)?

5.1.4 Data Collection and Analysis Method.

The ARTCCs collected data only during periods when the Rockville BOS (QJM) was operating as a commissioned and certified facility. The data were collected without a radome and again when the FGAR was installed. The ARTCC TSS/SMOC engineers then compared the QARS program output data to determine if the FGAR affected the electromagnetic performance characteristics of the secondary radar (ATCRBS/Mode S).

5.1.5 Results and Discussion.

The electromagnetic performance characteristic parameters measured by the QARS program, after the FGAR was installed, show only a slight variation from those measured prior to the installation (see appendices C, D, E, and F). The QARS data showed:

NOTE

The beacon Blip/Scan Ratio (BLIP/SCAN)
is equivalent to the Probability of
Detection (PD).

a. Minneapolis ARTCC (ZMP).

1. Blip/scan ratio (BLIP/SCAN) increased slightly (≤ 0.2 percent).
2. Mode 3/A reliability (MODE 3/A REL) increased slightly (≤ 0.1 percent).
3. Mode 3/A validity (MODE 3/A VAL) increased slightly (≤ 0.1 percent).
4. Mode C reliability (MODE C REL) increased slightly (≤ 0.1 percent).
5. Mode C validity (MODE C VAL) increased slightly (≤ 0.1 percent).

b. Denver ARTCC (ZDV).

1. Blip/scan ratio (BLIP/SCAN) increased slightly (≤ 0.3 percent).
2. Mode 3/A reliability (MODE 3/A REL) increased slight (≤ 0.1 percent).
3. Mode 3/A validity (MODE 3/A VAL) decreased slightly (≤ 0.1 percent).
4. Mode C reliability (MODE C REL) increased slightly (≤ 0.1 percent).
5. Mode C validity (MODE C VAL) increased slightly (≤ 0.1 percent).
6. Without a radome installed, there were no azimuth splits (AZ SPLIT) recorded. After the FGAR was installed, there was one azimuth split (AZ SPLIT) out of tolerance error.

c. Kansas City ARTCC (ZKC).

1. Blip/scan ratio (BLIP/SCAN) increased slightly (≤ 0.2 percent).
2. Mode 3/A reliability (MODE 3/A REL) increased slight (≤ 0.1 percent).
3. Mode 3/A validity (MODE 3/A VAL) decreased slightly (≤ 0.1 percent).
4. Mode C reliability (MODE C REL) increased slightly (≤ 0.1 percent).
5. Mode C validity (MODE C VAL) increased slightly (≤ 0.1 percent).

6. Without a radome installed, there were 11 beacon permanent echo (BPE) [parrot] azimuth (#4 AZ ERROR) out of tolerance errors (>2.0 nautical miles [NM]). After the installation of the FGAR, all BPE (parrot) azimuth error parameters (#4 AZ ERROR) were well within tolerance.

The differences found in the QARS data from the three ARTCCs can be attributed to the fact the ARTCCs do not collect QARS data at the same time of the day, therefore they are not receiving the same aircraft beacon data. In addition, each ARTCC's HCS operational program site adaptation parameters vary slightly.

All of the parameters measured by the QARS program were within the established national standards as defined in Chapter 3, Standards and Tolerances, Order 6100.1C, Maintenance of NAS En Route Stage A - Air Traffic Control System, except as noted above.

The average blip/scan ratio (BLIP/SCAN), Mode 3/A reliability (MODE 3/A REL), Mode 3/A validity (MODE 3/A VAL), Mode C reliability (MODE C REL), and Mode C validity (MODE C VAL) are shown in tables 5.1.5-1 through 5.1.5-5. The average blip/scan ratio (BLIP/SCAN), Mode 3/A validity (MODE 3/A VAL), and Mode C validity (MODE C VAL) are shown graphically in appendix C.

TABLE 5.1.5-1 BLIP/SCAN RATIO

Fail Criteria <96%	Without Radome %	FGAR %
Minneapolis (ZMP)	99.5	99.6
Denver (ZDV)	99.4	99.7
Kansas City (ZKC)	99.6	99.7

TABLE 5.1.5-2 MODE 3/A RELIABILITY

Fail Criteria <98%	Without Radome %	FGAR %
Minneapolis (ZMP)	99.6	99.7
Denver (ZDV)	99.7	99.7
Kansas City (ZKC)	99.7	99.7

TABLE 5.1.5-3 MODE 3/A VALIDITY

Fail Criteria <98%	Without Radome %	FGAR %
Minneapolis (ZMP)	99.3	99.4
Denver (ZDV)	99.5	99.5
Kansas City (ZKC)	99.5	99.4

TABLE 5.1.5-4 MODE C RELIABILITY

Fail Criteria <99%	Without Radome %	FGAR %
Minneapolis (ZMP)	99.7	99.7
Denver (ZDV)	99.7	99.8
Kansas City (ZKC)	99.7	99.8

TABLE 5.1.5-5 MODE C VALIDITY

Fail Criteria <99%	Without Radome %	FGAR %
Minneapolis (ZMP)	99.4	99.4
Denver (ZDV)	99.5	99.5
Kansas City (ZKC)	99.5	99.5

5.2 BFTA PROGRAM TESTS.

5.2.1 Test Objectives.

The objective was to determine if there were any differences in the number and/or types of beacon false targets, e.g., splits, ring-a-round (RAR), reflections (REF), etc., in the data being received by the ARTCCs, after the FGAR was installed.

5.2.2 Test Criteria.

The number and/or types of beacon false targets contained in the beacon data received by the ARTCCs did not increase, after the FGAR was installed.

5.2.3 Test Description.

The Minneapolis (ZMP), Denver (ZDV), and Kansas City (ZKC) ARTCCs ran the BFTA program on their HCS using beacon data received from the Rockville BOS (QJM). The ARTCCs TSS/SMOC engineers analyzed the BFTA program output data.

5.2.4 Data Collection and Analysis Method.

After the BFTA program was run on beacon data without a radome and after the FGAR was installed, the TSS/SMOC engineers compared the data to determine if there were any changes in the number and/or types of beacon false targets.

5.2.5 Results and Discussion.

a. Minneapolis ARTCC (ZMP).

1. The beacon false target rate decreased from 0.10 percent without a radome to 0.05 percent after the FGAR was installed. This was a significant improvement in the number of beacon false targets. (See appendix D.)

2. There were no RAR, REF, or pulse repetition frequency interference (PRF INTERF) errors recorded before or after the FGAR was installed.

b. Denver ARTCC (ZDV).

1. The false target rate decreased from 0.60 percent without a radome to 0.04 percent after the FGAR was installed. This was a significant improvement in the false target rate. (See appendix E.)

2. The target split rate decreased from 0.23 percent without a radome to 0.04 percent after the FGAR was installed. This was a significant improvement in the target split rate.

3. The RAR rate decreased from 0.36 percent without a radome to none (0.00 percent) after the FGAR was installed. This was a significant improvement in RAR.

c. Kansas City ARTCC (ZKC).

1. The average split rate (range cell, azimuth, and/or duplicate code) decreased from 0.12 percent without a radome to 0.05 percent after the FGAR was installed. This was a significant improvement in the split rate. (See appendix F.)

2. There were no RAR, REF, or PRF INTERF errors recorded before or after the FGAR was installed.

5.3 COMDIG PROGRAM TESTS.

5.3.1 Test Objectives.

The object was to determine if there were any changes in the position of the BPE [parrot] in the data received by the ARTCCs, after the FGAR was installed.

5.3.2 Test Criteria.

There was no change in the BPE (parrot) position, in the data received by the ARTCCs, after the FGAR was installed.

5.3.3 Test Description.

The Minneapolis (ZMP), Denver (ZDV), and Kansas City (ZKC) ARTCCs ran the COMDIG program on their HCS using beacon data received from the Rockville BOS (QJM). The ARTCCs TSS/SMOC engineers analyzed the COMDIG program output data.

5.3.4 Data Collection and Analysis Method.

After the COMDIG program was run on beacon data without a radome and after the FGAR was installed, the TSS/SMOC engineers compared the data to determine if there were any changes in the position of the BPE (parrot).

5.3.5 Results and Discussion.

The small changes in the BPE (parrot) position, without a radome and after the FGAR was installed, can be attributed to wind loading on the ATCRBS 5-foot planar array antenna. The effect of wind loading on the antenna was noted, to a much greater degree, during Type I/III FGAR OT&E testing.

The change in the BPE (parrot) average run length can be attributed to the fact that the without a radome data was collected with the ATCRBS 5-foot planar array installed. The data collected after the FGAR was installed was with the Mode S back-to-back phased array antennas.

NOTE

The ARTCCs are still receiving ATCRBS BPE (parrot) reply data, not Mode S Calibration Performance Monitor Equipment (CPME) reply data.

a. Minneapolis ARTCC (ZMP).

The BPE (parrot) was out of tolerance (more than two azimuth change pulses [ACP]) 1.8 percent of the time without a radome. This decreased to 0.6 percent after the FGAR was installed. (See appendix D.)

b. Denver ARTCC (ZDV).

1. The BPE (parrot) average run-length increased from 36-42 ACPs without a radome to 38-46 ACPs after the FGAR was installed. (See appendix E.)

2. The number of BPE (parrot) azimuth deviations decreased from 45 without a radome to 10 after the FGAR was installed.

c. Kansas City ARTCC (ZKC).

1. The azimuth of the BPE (parrot) changed an insignificant amount of 0.088°. (See appendix F.)

2. The BPE (parrot) showed a decrease in the altitude of 100 feet after the FGAR was installed. However, it was concluded that the change was caused by adjustment of the BPE (parrot) prior to the Mode S commissioning flight check.

5.4 RARRE PROGRAM TEST.

The Minneapolis ARTCC (ZMP) ran, in addition to the other tests, the RARRE program. The RARRE program range and altitude charts showed an increase in the number of low altitude targets being detected, after the FGAR was installed, at a range of 110 NM and greater. The majority of the targets were between 120° and 240°, with a small amount between 0° and 120°. The increased number of low altitude targets should not affect ATC. (See appendix D.)

5.5 FLIGHT CHECK.

The FAA Central Region had a flight check performed to commission the Mode S. The flight check was not a part of OT&E testing, but the results are included. (See appendix G.)

The flight check was performed on November 6, 1995, after the Electronic Space Systems Corporation (ESSCO) had completed the installation and testing of the FGAR. The FAA flight check aircraft was a Beech King-Air. The Mode S was operating in the ATCRBS mode. The flight check data were recorded and evaluated by the Minneapolis ARTCC (ZMP).

There was only one problem observed, an 11-3/8 NM decrease in the detection range of the flight check aircraft on an inbound flight leg. This may have been caused by the attitude of the aircraft with relation to the Rockville BOS (QJM). The aircraft beacon antenna may have been partially shielded by the aircraft.

6. CONCLUSIONS.

Since the Mode S replaced the ATCBI-5 at the same time the FGAR was installed, it is difficult to determine what effect the FGAR had on the electromagnetic performance characteristics of the secondary radar. The overall effect is, however, the electromagnetic performance characteristics of the facility are slightly improved.

7. RECOMMENDATIONS.

The results of OT&E Operational testing uncovered no major problems with the Type II FGAR when used with the Mode S. The FGAR meets the Operational Suitability and Operational Effectiveness requirements of the FAA. It is recommended that the Type II FGAR be integrated into the NAS.

8. ACRONYMS AND ABBREVIATIONS.

°	Degree(s)
>	Greater Than
<	Less Than
%	Percent(age)
ACP	Azimuth Change Pulse(s)
AFS	Airway Facilities Sector
AOL	Aircraft Obstruction Light(s)
APMT	Associate Program Manager for Test
ARTCC	Air Route Traffic Control Center
ASR	Airport Surveillance Radar
ATC	Air Traffic Control
ATCBI	Air Traffic Control Beacon Interrogator
ATCRBS	Air Traffic Control Radar Beacon System
ATSS	Air Traffic Systems Specialist
AZ DEV	Azimuth Deviation (QARS program)
AZ ERROR	Azimuth Error (QARS program)
AZ SPLIT	Azimuth Split (QARS program)
BCN	Beacon (QARS program)
BFTA	Beacon False Target Analysis (a computer program)
BLIP	Blip/Scan Ratio (QARS program)
BOS	Beacon Only Site
BPE	Beacon Permanent Echo (parrot)
CD	Common Digitizer
CD RECORD	Common Digitizer Record (a computer program)
COMDIG	Common Digitizer Data Reduction (a computer program)
CPME	Calibration Performance Monitoring Equipment
DRG	Data Receiver Group
DSS	Data System Specialist
ERMS	Environmental Remote Monitoring Subsystem
ESSCO	Electronic Space Systems Corporation (company name)

FAA	Federal Aviation Administration
FALSE-BCN	False Beacon (QARS program)
FDPSS	Flight Data Processor Systems Specialist
FGAR	Fixed Ground Antenna Radome
GFE	Government Furnished Equipment
HCS	HOST Computer System
HI	Hawaii
HOST	Air Traffic Control HOST Computer System (not an acronym)
IBM	International Business Machines Corporation (company name)
LIH	Lihue Terminal Radar Facility (identifier)
LPS	Lightning Protection Subsystem
MPH	Miles Per Hour
MODE 3/A REL	Mode 3/A Reliability Percentage (QARS program)
MODE 3/A VAL	Mode 3/A Validity Percentage (QARS program)
MODE C REL	Mode C Reliability Percentage (QARS program)
MODE C VAL	Mode C Validity Percentage (QARS program)
Mode S	Mode Select Beacon System
NAS	National Airspace System
NM	Nautical Mile(s)
NE	Nebraska
OT&E	Operational Test and Evaluation
PC	Personal Computer
PCT REL	Percent Reliability (QARS program)
PD	Probability of Detection
PE	Permanent Echo (QARS program)
PLOTCD	PLOTCD (TRACS program, not an acronym)
PRF INTERF	Pulse Repetition Frequency Interference (BFTA program)
QARS	Quick Analysis of Radar Sites (a computer program)
QJM	Rockville Beacon Only Site (identifier)
QPB	Samburg Beacon Only Site (identifier)
RAR	Ring-A-Round (BFTA and QARS programs)

RARRE	Range, Azimuth, Radar Reinforced Evaluator (a computer program)
RDAS-SS	Radar Data Acquisition Subsystem System Specialist
REF	Reflections (BFTA and QARS programs)
RF	Radio Frequency
RMMS	Remote Maintenance Monitoring System
RNG DEV	Range Deviation (QARS program)
RNG ERROR	Range Error (QARS program)
SCAN	Blip/Scan Ratio (QARS program)
SMO	Systems Management Office
SMOC	Service Management Operations Center
TEMP	Test and Evaluation Master Plan
TN	Tennessee
TRACS	Transportable Radar Analysis Computer System
TSS	Technical Support Staff
VAC	Volts Alternating Current
VDC	Volts Direct Current
ZDV	Denver Air Route Traffic Control Center (identifier)
ZER	Code Zero Percentage (QARS program)
ZKC	Kansas City Air Route Traffic Control Center (identifier)
ZMP	Minneapolis Air Route Traffic Control Center (identifier)

APPENDIX A
TEST PARTICIPANTS

TEST PARTICIPANTS

The personnel, their title, and organization, who participated in the testing are listed below.

1. FAA Technical Center.

Harold G. Sedgwick, FGAR Test Director, Senior Engineer,
Raytheon/ACT-310B

2. Minneapolis ARTCC (ZMP).

Richard Harris, Flight Data Processor Systems Specialist (FDPSS)

Tracy Kubat, Data System Specialist (DSS)

Eric Routhier, Data Systems Specialist (DSS)

3. Denver ARTCC (ZDV).

Thomas Schmidt, Air Traffic System Specialist (ATSS)

4. Kansas City ARTCC (ZKC).

Lawrence H. Patrick, Radar Data Acquisition Subsystem System Specialist
(RDAS-SS)

5. Rockville BOS (QJM).

Dennis Day, Electronic Technician

Leo Ryan, Electronic Technician

APPENDIX B
DATA ANALYSIS PROGRAMS

DATA ANALYSIS PROGRAMS

The programs used to analyze the secondary radar (ATCRBS/Mode S) electromagnetic performance parameters are described below:

1. Beacon False Target Analysis (BFTA) Program.

The BFTA program is a tool used to investigate and evaluate false target problems of secondary radar systems. The BFTA program is run on the HCS.

- a. Pulse Repetition Frequency Interference (PRF INTERF) - If pulse repetition frequency interference is detected, the azimuth of the detected interference and the cyclic pattern of the interference relative to time intervals is outputted.
- b. Reflections (REF) - The physical location of the six most prominent reflecting surfaces which are causing false targets are outputted, with the most serve reflecting surface first. The range is in whole and tenths of miles. The azimuth is in degrees by 2° sectors.
- c. Ring-A-Round (RAR) - The TOTAL OCCURRENCES is the number of beacon targets exhibiting ring-a-round. The RING-A-ROUND RATE is the percentage of beacon targets analyzed which exhibit ring-a-round.

2. Common Digitizer Data Reduction (COMDIG) Program.

The COMDIG program extracts selected types of data from a CD RECORD program tape containing various mixtures of the six different Common Digitizer (CD) message types received at the HCS and prints the data in prescribed formats. The COMDIG program is run on the HCS.

3. Common Digitizer Record (CD RECORD) Program.

The CD RECORD program provides the capability to record on magnetic tape, CD data as received over the Data Receiver Group (DRG)/HCS interface. The CD RECORD program is run on the HCS.

4. PLOTCD Program.

The PLOTCD program provides the capability to plot and sort aircraft and weather data in a polar presentation on a International Business Machines (IBM) Corporation compatible personal computer (PC) graphics display. The target data is retrieved from a CD RECORD disk file. The PLOTCD program is run on a Transportable Radar Analysis Computer System (TRACS) PC.

5. Quick Analysis of Radar Sites (QARS) Program.

The QARS program provides confirmation of an ARTCCs CD interface and operational status. The data can be either real time or a CD RECORD format tape. The QARS program is run on the HCS.

The QARS program is divided into two sections: (1) Radar System Interface Verification, and (2) Radar Data Analysis Summary routine which analyzes the beacon tracks. The following are the applicable Radar Data Analysis Summary parameters:

- a. Scan - Total number of antenna revolutions for the period of time the beacon return was tracked.

- b. Blip/Scan - The percentage ratio of the number of times a target was detected (BLIP) to the number of times it could have been detected (SCAN).
- c. Beacon Split -
 - 1. Azimuth Split (AZ SPLIT) - One beacon target providing two beacon messages with the same discrete code within one scan interval which are in the same range cell, and azimuth separation is equal to or less than 45 ACPs.
 - 2. Range Split (RNG SPLIT) - One beacon target providing two beacon messages with the same discrete code within one scan interval which are in adjacent range cells and azimuth separation is equal to or less than 30 ACPs.
- d. False Beacon (FALSE-BCN) -
 - 1. Code Zero Percentage (ZER) - The code zero percentage (ZER) is the ratio of the number of beacon targets with code zeros to the number of beacon targets with the correct code. Only code zero targets in the clear are counted. Code zero targets that are associated with splits, reflections (REF), or ring-a-rounds (RAR) are not counted as a part of the total code zeros.
 - 2. Reflections (REF) - Reflections are caused by large flat surfaces, such as buildings and fences near the ground antenna. These surfaces reflect the interrogations and reply signals causing the ground antenna to receive aircraft replies not only when looking directly toward the aircraft, but when looking toward the reflectors. The result is a false target that remains in the system for a period of time that is dependent on the size and location of the reflecting surface.
 - 3. Ring-A-Round (RAR) - A ring-a-round condition is caused by the smaller side lobes of radio frequency (RF) energy radiated from the beacon antenna that are strong enough to interrogate a beacon transponder at close range almost continuously while the antenna is rotating through a good portion of its entire scan.
- e. Code Reliability -
 - 1. Mode 3/A Reliability Percentage (MODE 3/A REL) - The ratio of the number of beacon returns with the correct code present in each reply to the total number of beacon returns tracked.
 - 2. Mode 3/A Validity (MODE 3/A VAL) - The Mode 3/A code validity bit is set in the CD when two successive replies in response to the same mode from the same aircraft are identical. The percentage reported is the ratio of declared beacon returns, to the total number of beacon returns tracked.
 - 3. Mode C Reliability Percentage (MODE C REL) - The ratio of the total number of beacon returns, with a reported altitude within ± 800 feet of the last reliable altitude, to the total number of Mode C returns tracked.

4. Mode C Validity (MODE C VAL) - The mode C validity (MODE C VAL) is confirmed and reported by the CD in the same manner described for mode 3/A validity (MODE 3/A VAL). The percentage reported is the ratio of Mode C validated beacon messages to the total number of beacon messages received.

f. Deviation -

1. Azimuth Deviation (AZ DEV) - The mean difference of the predicted versus actual position of the track. The absolute difference is accumulated and then divided by the number of returns for the track. The value depicts the azimuth in ACPs.
2. Range Deviation (RNG DEV) - The mean difference of the predicted versus actual position of the track. The absolute difference is accumulated and then divided by the number of returns for the track. The value depicts the range in eighths of a nautical mile.

g. Permanent Echo (PE) Verification -

1. Azimuth Error (AZ ERROR) - The mean error between the reported and the adapted position of the PE in whole and tenths of ACPs.
2. Percent Reliability (PCT REL) - Calculated from 50 scans initiated by receipt of the first PE that compares to the adapted value.
3. Range Error (RNG ERROR) - The mean error between the reported and the adapted position of the PE in whole and eighths of a nautical mile.

6. Range, Azimuth, Radar Reinforced Evaluator (RARRE) Program.

The RARRE program provides the capability to retrieve, sort, and print target information pertaining to all Mode 3/A beacon equipped aircraft detected by any number of radar and/or BOS facilities. The data are received from a CD RECORD format tape. The RARRE program is run on the HCS.

APPENDIX C
QARS DATA AND HISTOGRAMS

QARS DATA AND HISTOGRAMS

The Rockville BOS (QJM) QARS data and histograms are presented as follows:

1. Pages C-2 and C-3, Minneapolis ARTCC (ZMP) QARS data without a radome.
2. Pages C-4 and C-5, Minneapolis ARTCC (ZMP) QARS data with the FGAR installed.
3. Page C-6, Minneapolis ARTCC (ZMP) QARS data histogram.
4. Pages C-7 and C-8, Denver ARTCC (ZDV) QARS data without a radome.
5. Pages C-9 and C-10, Denver ARTCC (ZDV) QARS data with the FGAR installed.
6. Page C-11, Denver ARTCC (ZDV) QARS data histogram.
7. Pages C-12 and C-13, Kansas City ARTCC (ZKC) QARS data without a radome.
8. Pages C-14 and C-15, Kansas City ARTCC (ZKC) QARS data with the FGAR installed.
9. Page C-16, Kansas City ARTCC (ZKC) QARS data histogram.

MINNEAPOLIS (ZMP) QARS DATA FOR ROCKVILLE BOS (QJM) WITHOUT RADOME

DATE		10/1/95	10/2/95	10/3/95	10/4/95	10/5/95	10/6/95	10/7/95	10/8/95	10/9/95	10/10/95
	FAIL	#	#	#	#	#	#	#	#	#	#
	CRITERIA										
BEACON											
Scans		16544	17877	**	13563	14807	**	14766	20212	15007	6298
Blip/Scan	<96%	99.8	99.3	**	99.6	99.8	**	99.5	99.6	99.3	99.3
Az-Split	> 1/2/2%	.0	.0	**	.0	.0	**	.0	.0	.1	.0
Rng-Split	> 1/2/5%	.0	.0	**	.0	.0	**	.0	.0	.0	.0
Ring Around	>5%	.0	.0	**	.0	.0	**	.0	.0	.0	.0
Reflections	>2%	.0	.0	**	.0	.0	**	.0	.0	.0	.0
Code Zeros	>5%	.1	.1	**	.1	.1	**	.2	.1	.1	.1
Mode 3/A Rel	<96/97%	99.5	99.4	**	99.7	99.7	**	99.6	99.7	99.7	99.7
Mode 3/A Val	<96/97%	99.2	99.3	**	99.5	99.5	**	99.4	99.3	99.5	99.5
Mode C Rel	<98/97/95%	99.6	99.7	**	99.8	99.8	**	99.7	99.7	99.7	99.6
Mode C Val	<98/97/95%	99.2	99.4	**	99.5	99.6	**	99.4	99.4	99.5	99.6
Mode C Scans		16510	17741	**	13511	14775	**	17379	20141	14897	4250
Rng Dev	>0/1	0/1	0/1	**	0/1	0/1	**	0/1	0/1	0/0	0/1
Az Dev	>2.0/3.0	1.66	1.33	**	1.59	1.57	**	1.55	1.55	1.56	1.41
PE VERIFICATION											
#1 Rng Error	>0/1										
#1 Az Error	>2.0										
#1 Pct Rel	<90%										
#2 Rng Error	>0/1										
#2 Az Error	>2.0										
#2 Pct Rel	<90%										
#3 Rng Error	>0/1	+0/0	+0/0	**	+0/0	+0/0	**	+0/0	+0/0	+0/0	+0/0
#3 Az Error	>2.0	-0.5	+1.0	**	+1.0	+1.1	**	+1.1	+1.3	+1.1	+0.9
#3 Pct Rel	<90%	92.0	100.0	**	100.0	100.0	**	100.0	100.0	96.0	100.0
#4 Rng Error	>0/1										
#4 Az Error	>2.0										
#4 Pct Rel	<90%										
TOTAL TRACKS		137	144	**	127	142	**	150	165	163	122
BCN CHANNEL		B	B	**	A	A	**	A	A	A	A

MINNEAPOLIS (ZMP) QARS DATA FOR ROCKVILLE BOS (QJM) WITHOUT RADOME (Continued)

DATE	10/11/95	10/12/95	10/13/95	10/14/95	10/15/95	10/16/95	10/17/95	10/18/95	10/19/95	10/20/95	10/21/95
#	#	#	#	#	#	#	#	#	#	#	#
FAIL CRITERIA											
BEACON											
Scans	9935	13647	19629	20246	19697	8144	16479	16624	19484	19867	18473
Blip/Scan	98.8	99.0	99.0	99.4	99.7	99.8	99.8	99.6	99.7	99.3	99.3
Az-Split	.0	.0	.0	.0	.0	.1	.0	.0	.0	.5*	.0
Rng-Split	.0	.0	.0	.0	.0	.1	.0	.0	.0	.3	.0
Ring Around	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Reflections	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Code Zeros	.2	.4	.2	.1	.2	.0	.0	.0	.2	.1	.1
Mode 3/A Rel	99.7	99.0	99.5	99.8	99.6	99.8	99.8	99.5	99.5	99.8	99.7
Mode 3/A Val	99.4	98.4	99.1	99.6	99.4	99.6	99.6	99.6	99.1	99.4	99.4
Mode C Rel	99.7	99.1	99.5	99.8	99.7	99.8	99.8	99.8	99.5	99.8	99.7
Mode C Val	99.4	98.5	99.1	99.6	99.5	99.6	99.6	99.6	99.1	99.4	99.5
Mode C Scans	9808	13450	19794	20137	19647	8125	16441	16566	19436	19682	18355
Rng Dev	0/0	0/1	0/0	0/1	0/1	0/0	0/1	0/1	0/0	0/1	0/1
Az Dev	1.50	1.66	1.66	1.56	1.58	1.58	1.42	1.40	1.41	1.49	1.41
PE VERIFICATION											
#1 Rng Error	>0/1										
#1 Az Error	>2.0										
#1 Pct Rel	<90%										
#2 Rng Error	>0/1										
#2 Az Error	>2.0										
#2 Pct Rel	<90%										
#3 Rng Error	>0/1										
#3 Az Error	>2.0										
#3 Pct Rel	<90%										
#4 Rng Error	>0/1										
#4 Az Error	>2.0										
#4 Pct Rel	<90%										
TOTAL TRACKS											
BCN CHANNEL	94	127	33	165	151	140	153	146	147	197	154
	A	A	A	A	A	A	A	A	A	A	A

LEGEND

ATCBI-5 WITH ATCRBS ANTENNA
 ## MODE S OPERATING IN ATCRBS MODE WITH ATCRBS ANTENNA
 ** NO QARS DATA AVAILABLE

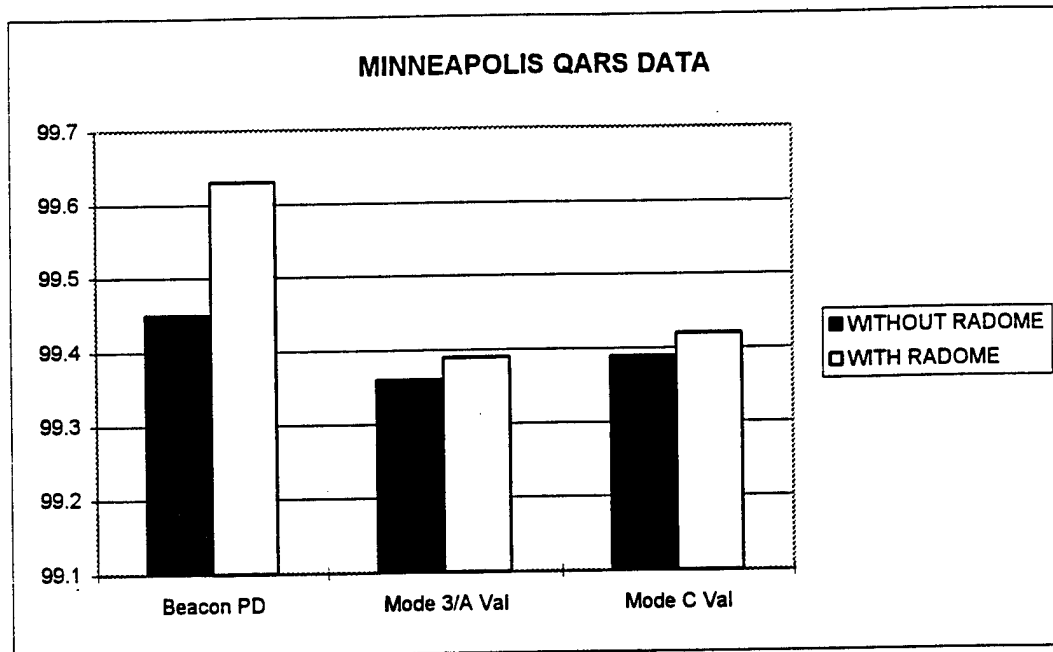
MINNEAPOLIS (ZMP) QARS DATA FOR ROCKVILLE BOS (QJM) WITH RADOME

DATE	11/13/95	11/14/95	11/15/95	11/16/95	11/17/95	11/18/95	11/19/95	11/20/95
FAIL CRITERIA	###	###	###	###	###	###	###	###
BEACON								
Scans	22000	17937	19471	17004	19412	15174	21303	18237
Blip/Scan	99.8	99.5	99.6	99.7	99.8	99.7	99.5	99.4
Az-Split	.0	.0	.0	.0	.0	.0	.0	.0
Rng-Split	.0	.0	.0	.0	.0	.0	.0	.0
Ring Around	.0	.0	.0	.0	.0	.0	.0	.0
Reflections	.0	.0	.0	.0	.0	.0	.0	.0
Code Zeros	.1	.2	.1	.2	.1	.1	.1	.1
Mode 3/A Rel	99.7	99.7	99.7	99.6	99.8	99.7	99.7	99.7
Mode 3/A Val	99.5	99.4	99.4	99.4	99.5	99.6	99.3	99.4
Mode C Rel	99.7	99.7	99.8	99.7	99.7	99.6	99.8	99.7
Mode C Val	99.5	99.3	99.5	99.4	99.4	99.6	99.4	99.4
Mode C Scans	21974	17852	19344	16957	19364	15131	21203	18135
Rng Dev	0/0	0/1	0/1	0/0	0/1	0/1	0/1	0/0
Az Dev	1.39	1.43	1.90	1.44	1.43	1.44	1.40	1.42
PE VERIFICATION								
#1 Rng Error	>0/1							
#1 Az Error	>2.0							
#1 Pct Rel	<90%							
#2 Rng Error	>0/1							
#2 Az Error	>2.0							
#2 Pct Rel	<90%							
#3 Rng Error	>0/1	+0/0	+0/0	+0/0	+0/0	+0/0	+0/0	+0/0
#3 Az Error	>2.0	-1.0	-1.1	-1.0	-1.0	+0.6	-1.1	+0.9
#3 Pct Rel	<90%	100.0	100.0	95.0	100.0	100.0	100.0	100.0
#4 Rng Error	>0/1							
#4 Az Error	>2.0							
#4 Pct Rel	<90%							
TOTAL TRACKS	165	180	169	139	153	184	152	159
BCN CHANNEL	A	A	A	A	A	A	A	A

MINNEAPOLIS (ZMP) QARS DATA FOR ROCKVILLE BOS (QJM) WITH RADOME (Continued)

DATE		FAIL CRITERIA		11/21/95	11/22/95	11/23/95	11/24/95	11/25/95	11/26/95	11/27/95
		###		###		###		###		###
BEACON										
Scans		17480	20148	23438	19095	19637	20724	19059		
Blip/Scan	<96%	99.4	99.4	99.8	99.8	99.8	99.8	99.5		
Az-Split	> 1/21.2%	.0	.0	.0	.0	.0	.0	.0		
Rng-Split	> 1/21.5%	.0	.0	.0	.0	.0	.0	.0		
Ring Around	> 5%	.0	.0	.0	.0	.0	.0	.0		
Reflections	> 2%	.0	.0	.0	.0	.0	.0	.0		
Code Zeros	> 5%	.1	.1	.1	.1	.1	.0	.2		
Mode 3/A Rel	<96/97%	99.6	99.7	99.6	99.7	99.6	99.8	99.5		
Mode 3/A Val	<96/97%	99.3	99.4	99.3	99.5	99.2	99.5	99.1		
Mode C Rel	<98/97/95%	99.6	99.8	99.8	99.7	99.7	99.8	99.5		
Mode C Val	<98/97/95%	99.3	99.5	99.5	99.5	99.4	99.5	99.1		
Mode C Scans		17376	20019	23342	19065	19595	20687	18967		
Rng Dev	>0/1	0/1	0/0	0/1	0/1	0/0	0/1	0/0		
Az Dev	>2.0/3.0	1.47	1.45	1.38	1.43	1.41	1.40	1.44		
PE VERIFICATION										
#1 Rng Error	>0/1									
#1 Az Error	>2.0									
#1 Pct Rel	<90%									
#2 Rng Error	>0/1									
#2 Az Error	>2.0									
#2 Pct Rel	<90%									
#3 Rng Error	>0/1	+0/0	+0/0	+0/0	+0/0	+0/0	+0/0	+0/0		
#3 Az Error	>2.0	-1.0	-0.8	-1.0	-1.1	-1.2	-0.9	-1.0		
#3 Pct Rel	<90%	100.0	100.0	100.0	100.0	100.0	98.0	100.0		
#4 Rng Error	>0/1									
#4 Az Error	>2.0									
#4 Pct Rel	<90%									
TOTAL TRACKS		168	183	178	154	149	159	141		
BCN CHANNEL		A	A	A	A	A	A	A		

LEGEND	
###	MODE S OPERATING IN ATCRBS MODE



DENVER (ZDV) QARS DATA FOR ROCKVILLE BOS (QJM) WITHOUT RADOME

DATE		10/1/95	10/2/95	10/3/95	10/4/95	10/5/95	10/6/95	10/7/95	10/8/95	10/9/95	10/10/95
	FAIL CRITERIA	#	#	#	#	#	#	#	#	#	#
BEACON											
	Scans	16621	12471	13426	**	12432	16710	21408	18886	15881	14239
	Blip/Scan	99.6	99.6	99.1	**	99.4	99.5	99.7	99.7	99.6	98.8
	Az-Split	.0	.0	.0	**	.0	.1	.0	.0	.1	.0
	> 1/2/2%				**						
	Az-Split	.0	.0	.0	**	.0	.0	.0	.0	.0	.0
	> 1/2/5%				**						
	Rng-Split	.0	.0	.0	**	.0	.0	.0	.0	.0	.0
	> 5%				**						
	Ring Around	.0	.0	.0	**	.0	.0	.0	.0	.0	.0
	> 2%				**						
	Reflections	.0	.0	.0	**	.0	.0	.0	.0	.0	.0
	> 5%				**	.1	.1	.1	.1	.1	.1
	Code Zeros	.0	.1	.0	**						
	Mode 3/A Rel	99.7	99.7	99.5	**	99.8	99.7	99.6	99.7	99.7	99.8
	<98%				**						
	Mode 3/A Val	99.5	99.3	99.3	**	99.6	99.3	99.3	99.4	99.4	99.6
	<98%				**						
	Mode C Rel	99.7	99.7	99.6	**	99.7	99.7	99.6	99.6	99.7	99.7
	<98/97%				**						
	Mode C Val	99.5	99.4	99.7	**	99.6	99.3	99.2	99.4	99.4	99.4
	<97/95%				**						
	Mode C Scans	16535	12420	13502	**	12354	16616	21356	18842	15802	14070
	>0/1				**						
	Rng Dev	0/0	0/0	0/0	**	0/0	0/0	0/0	0/0	0/0	0/0
	>2.0	1.61	1.34	1.49	**	1.40	1.61	1.56	1.54	1.60	1.43
PE VERIFICATION											
	>0/1	+0/0	+0/0	+0/0	**	+0/0	+0/0	+0/0	+0/0	+0/0	+0/0
	#1 Rng Error				**						
	>2.0	+1.2	+1.2	+1.0	**	+0.9	+1.0	+1.0	+1.1	+1.1	+1.2
	#1 Az Error				**						
	<90%	100.0	100.0	100.0	**	100.0	100.0	100.0	100.0	100.0	100.0
	#1 Pct Rel										
	>0/1										
	#2 Rng Error										
	>2.0										
	#2 Az Error										
	<90%										
	#2 Pct Rel										
	>0/1										
	#3 Rng Error										
	>2.0										
	#3 Az Error										
	<90%										
	#3 Pct Rel										
	>0/1										
	#4 Rng Error										
	>2.0										
	#4 Az Error										
	<90%										
	#4 Pct Rel										
TOTAL TRACKS		126	96	**	**	106	131	175	136	125	125
BCN CHANNEL		B	B	**	**	A	A	A	A	A	A

DENVER (ZDV) QARS DATA FOR ROCKVILLE BOS (QJM) WITHOUT RADOME (Continued)

DATE		10/11/95	10/12/95	10/13/95	10/14/95	10/15/95	10/16/95	10/17/95	10/18/95	10/19/95	10/20/95	10/21/95
	FAIL CRITERIA	#	#	#	#	#	#	#	#	#	#	#
BEACON												
Scans		10146	18139	18034	14319	15637	13349	17597	17753	14368	16143	19513
Blip/Scan	<96%	97.7	99.5	99.6	99.9	99.7	99.7	99.7	99.7	99.5	99.5	99.3
Az-Split	> 1/2/2%	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Rng-Split	> 1/2/5%	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Ring Around	> .5%	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Reflections	> .2%	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Code Zeros	> .5%	.2	.1	.0	.0	.1	.1	.1	.1	.0	.0	.1
Mode 3/A Rel	<98%	99.6	99.6	99.7	99.8	99.7	99.8	99.7	99.7	99.8	99.9	99.8
Mode 3/A Val	<98%	99.4	99.4	99.6	99.5	99.4	99.5	99.4	99.4	99.6	99.8	99.6
Mode C Rel	<98/97%	99.7	99.7	99.7	99.8	99.7	99.7	99.8	99.7	99.8	99.8	99.8
Mode C Val	<97/95%	99.4	99.5	99.5	99.5	99.4	99.5	99.5	99.4	99.6	99.7	99.6
Mode C Scans		9941	18065	17966	14313	15586	13314	17535	17715	14292	16063	19367
Rng Dev	>0/1	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
Az Dev	>2.0	1.41	1.66	1.62	1.56	1.61	1.41	1.39	1.48	1.45	1.39	1.40
PE VERIFICATION												
#1 Rng Error	>0/1	+0/0	+0/0	+0/0	+0/0	+0/0	+0/0	+0/0	+0/0	**	**	**
#1 Az Error	>2.0	+1.1	+1.1	+1.4	+1.2	+1.2	+1.4	+1.2	+1.1	**	**	**
#1 Pct Rel	<90%	100.00	98.0	100.0	100.0	100.0	100.0	100.0	100.0	**	**	**
#2 Rng Error	>0/1											
#2 Az Error	>2.0											
#2 Pct Rel	<90%											
#3 Rng Error	>0/1											
#3 Az Error	>2.0											
#3 Pct Rel	<90%											
#4 Rng Error	>0/1											
#4 Az Error	>2.0											
#4 Pct Rel	<90%											
TOTAL TRACKS		112	161	135	99	124	110	120	144	118	121	161
BCN CHANNEL		A	B	B	A	A	A	A	A	A	A	A

LEGEND

ATCBI-5 WITH ATCRBS ANTENNA
 ## MODE S OPERATING IN ATCRBS MODE WITH ATCRBS ANTENNA
 ** NO QARS DATA AVAILABLE

DENVER (ZDV) QARS DATA FOR ROCKVILLE BOS (QJM) WITH RADOME

DATE		11/13/95	11/14/95	11/15/95	11/16/95	11/17/95	11/18/95	11/19/95	11/20/95
	FAIL CRITERIA	###	###	###	###	###	###	###	###
BEACON									
Scans		**	**	**	13864	13078	14722	15363	14401
Blip/Scan	<96%	**	**	**	99.6	99.7	99.6	99.8	99.9
Az-Split	> 11.2/2%	**	**	**	.0	0.5*	.0	.0	.0
Rng-Split	> 11.2/5%	**	**	**	.0	.0	.0	.0	.0
Ring Around	> 5%	**	**	**	.0	.0	.0	.0	.0
Reflections	> 2%	**	**	**	.0	.0	.0	.0	.0
Code Zeros	> 5%	**	**	**	.0	.1	.1	.1	.1
Mode 3/A Rel	<96/97%	**	**	**	99.8	99.6	99.7	99.7	99.6
Mode 3/A Val	<96/97%	**	**	**	99.6	99.2	99.3	99.5	99.4
Mode C Rel	<98/97/95%	**	**	**	99.8	99.6	99.8	99.7	99.7
Mode C Val	<98/97/95%	**	**	**	99.6	99.3	99.3	99.5	99.4
Mode C Scans		**	**	**	13807	13044	14663	15335	14390
Rng Dev	>0/1	**	**	**	0/0	0/0	0/0	0/0	0/0
Az Dev	>2.0/3.0	**	**	**	1.42	1.48	1.40	1.39	1.42
PE VERIFICATION									
#1 Rng Error	>0/1	**	**	**	**	**	**	**	**
#1 Az Error	>2.0	**	**	**	**	**	**	**	**
#1 Pct Rel	<90%	**	**	**	**	**	**	**	**
#2 Rng Error	>0/1								
#2 Az Error	>2.0								
#2 Pct Rel	<90%								
#3 Rng Error	>0/1								
#3 Az Error	>2.0								
#3 Pct Rel	<90%								
#4 Rng Error	>0/1								
#4 Az Error	>2.0								
#4 Pct Rel	<90%								
TOTAL TRACKS		**	**	**	118	105	113	112	107
BCN CHANNEL		**	**	**	A	A	A	A	A

DENVER (ZDV) QARS DATA FOR ROCKVILLE BOS (QJM) WITH RADOME (Continued)

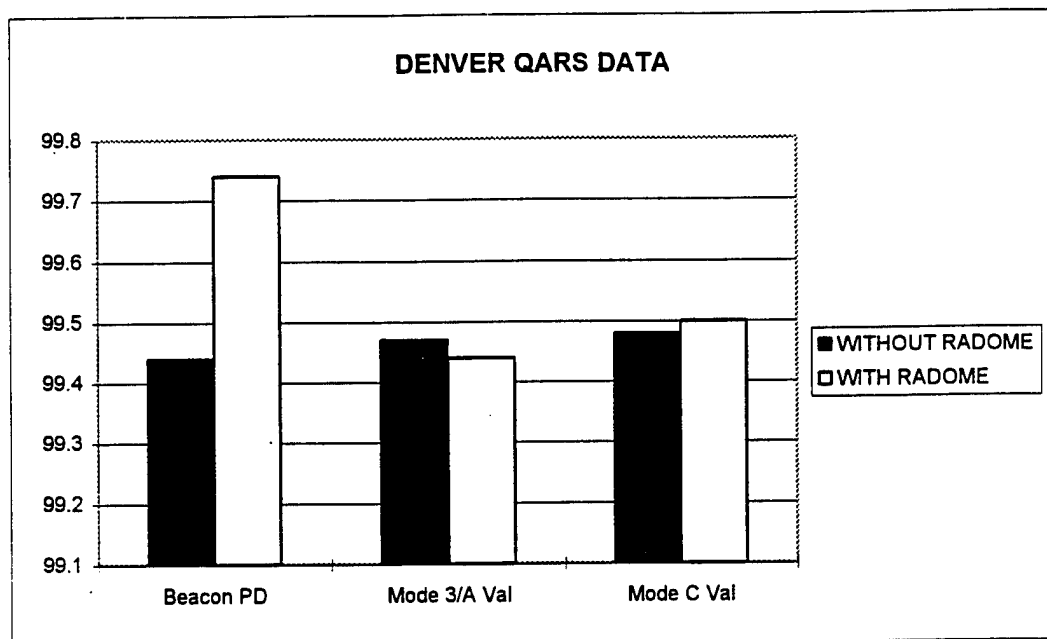
DATE	FAIL CRITERIA	11/21/95 ###	11/22/95 ###	11/23/95 ###	11/24/95 ###	11/25/95 ###	11/26/95 ###	11/27/95 ###
BEACON								
Scans		13943	13892	16334	11866	15877	15450	**
Blip/Scan	<96%	99.7	99.8	99.8	99.8	99.6	99.8	**
Az-Split	>.1/2/2%	.0	.0	.0	.0	.0	.0	**
Rng-Split	>.1/2/5%	.0	.0	.0	.0	.0	.0	**
Ring Around	>.5%	.0	.0	.0	.0	.0	.0	**
Reflections	>.2%	.0	.0	.0	.0	.0	.0	**
Code Zeros	>.5%	.1	.1	.0	.0	.1	.0	**
Mode 3/A Rel	<96/97%	99.7	99.7	99.8	99.8	99.8	99.8	**
Mode 3/A Val	<96/97%	99.4	99.3	99.5	99.7	99.7	99.5	**
Mode C Rel	<98/97/95%	99.8	99.8	99.8	99.9	99.8	99.8	**
Mode C Val	<98/97/95%	99.5	99.5	99.5	99.7	99.7	99.5	**
Mode C Scans		13886	13849	16305	11847	15813	15428	**
Rng Dev	>0/1	0/0	0/0	0/0	0/0	0/0	0/0	**
Az Dev	>2.0/3.0	1.41	1.41	1.38	1.40	1.41	1.41	**
PE VERIFICATION								
#1 Rng Error	>0/1	**	**	**	**	**	**	**
#1 Az Error	>2.0	**	**	**	**	**	**	**
#1 Pct Rel	<90%	**	**	**	**	**	**	**
#2 Rng Error	>0/1							
#2 Az Error	>2.0							
#2 Pct Rel	<90%							
#3 Rng Error	>0/1							
#3 Az Error	>2.0							
#3 Pct Rel	<90%							
#4 Rng Error	>0/1							
#4 Az Error	>2.0							
#4 Pct Rel	<90%							
TOTAL TRACKS		108	110	111	89	123	126	**
BCN CHANNEL		A	A	A	A	A	A	**

LEGEND

* OUT OF TOLERANCE (FAIL)

** NO QARS DATA AVAILABLE

MODE S OPERATING IN ATCRBS MODE



KANSAS CITY (ZKC) QARS DATA FOR ROCKVILLE BOS (QJM) WITHOUT RADOME

DATE		10/1/95	10/2/95	10/3/95	10/4/95	10/5/95	10/6/95	10/7/95	10/8/95	10/9/95	10/10/95
	FAIL CRITERIA	#	#	#	#	#	#	#	#	#	#
BEACON											
	Scans	13199	**	**	**	11993	14852	10835	15070	17743	**
	Blip/Scan	99.3	**	**	**	99.7	99.4	99.6	99.8	99.4	**
	Az-Split	.0	**	**	**	.0	.1	.1	.0	.1	**
	Rng-Split	.0	**	**	**	.0	.0	.0	.0	.0	**
	Ring Around	.0	**	**	**	.0	.0	.0	.0	.0	**
	Reflections	.0	**	**	**	.0	.0	.0	.0	.0	**
	Code Zeros	.0	**	**	**	.1	.1	.1	.1	.1	**
	Mode 3/A Rel	99.7	**	**	**	99.7	99.7	99.8	99.6	99.8	**
	Mode 3/A Val	99.4	**	**	**	99.5	99.4	99.6	99.3	99.3	**
	Mode C Rel	99.7	**	**	**	99.7	99.7	99.8	99.6	99.7	**
	Mode C Val	99.5	**	**	**	99.4	99.4	99.6	99.3	99.4	**
	Mode C Scans	13107	**	**	**	11964	14761	10766	15041	17642	**
	Rng Dev	0/0	**	**	**	0/0	0/0	0/0	0/0	0/0	**
	Az Dev	1.66	**	**	**	1.54	1.62	1.61	1.33	1.59	**
PE VERIFICATION											
	#1 Rng Error										
	#1 Az Error										
	#1 Pct Rel										
	#2 Rng Error										
	#2 Az Error										
	#2 Pct Rel										
	#3 Rng Error										
	#3 Az Error										
	#3 Pct Rel										
	#4 Rng Error	+0/0	**	**	**	+0/0	+0/0	+0/0	+0/0	+0/0	**
	#4 Az Error	+2.0	**	**	**	+1.8	+1.9	+2.3*	+2.1*	+2.1*	**
	#4 Pct Rel	100.0	**	**	**	100.0	100.0	100.0	100.0	100.0	**
TOTAL TRACKS		122	**	**	**	106	119	89	115	136	**
BCN CHANNEL		A	**	**	**	A	A	A	A	A	**

KANSAS CITY (ZKC) QARS DATA FOR ROCKVILLE BOS (QJM) WITHOUT RADOME (Continued)

DATE		#	10/11/95	10/12/95	10/13/95	10/14/95	10/15/95	10/16/95	10/17/95	10/18/95	10/19/95	10/20/95	10/21/95
	FAIL CRITERIA		#	#	#	#	#	##	##	##	##	##	##
BEACON													
Scans		**	13232	16076	12676	8811	11310	13024	12485	14422	14709	16061	
Blip/Scan	<96%	**	99.6	99.7	99.9	99.7	99.6	99.7	99.7	99.4	99.5	99.4	99.4
Az-Split	> .1/.2/.2%	**	.0	.0	.0	.6	.0	.0	.0	.0	.0	.0	.0
Rng-Split	> .1/.2/.5%	**	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0
Ring Around	> 5%	**	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Reflections	> 2%	**	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Code Zeros	> 5%	**	.1	.1	.0	.1	.1	.1	.1	.1	.0	.0	.0
Mode 3/A Rel	<96/97%	**	99.5	99.8	99.8	99.7	99.7	99.7	99.6	99.7	99.8	99.8	99.8
Mode 3/A Val	<96/97%	**	99.4	99.6	99.6	99.4	99.5	99.3	99.3	99.5	99.7	99.7	99.7
Mode C Rel	<98/97/95%	**	99.7	99.7	99.8	99.7	99.7	99.7	99.6	99.8	99.8	99.8	99.8
Mode C Val	<98/97/95%	**	99.5	99.5	99.6	99.3	99.5	99.5	99.3	99.5	99.7	99.7	99.7
Mode C Scans		**	13176	16026	12669	8784	11278	12978	12453	14320	14632	15972	
Rng Dev	>0/1	**	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
Az Dev	>2.0/3.0	**	1.66	1.63	1.55	1.66	1.41	1.40	1.47	1.45	1.39	1.42	
PE VERIFICATION													
#1 Rng Error	>0/1												
#1 Az Error	>2.0												
#1 Pct Rel	<90%												
#2 Rng Error	>0/1												
#2 Az Error	>2.0												
#2 Pct Rel	<90%												
#3 Rng Error	>0/1												
#3 Az Error	>2.0												
#3 Pct Rel	<90%												
#4 Rng Error	>0/1	**	+0/0	+0/0	+0/0	+0/0	+0/0	+0/0	+0/0	+0/0	+0/0	+0/0	+0/0
#4 Az Error	>2.0	**	+2.2*	+2.2*	+2.2*	+2.2*	+2.2*	+2.2*	+2.0	+2.2*	+2.1*	+2.0	+2.0
#4 Pct Rel	<90%	**	98.0	100.0	100.0	100.0	100.0	98.0	100.0	100.0	98.0	100.0	100.0
TOTAL TRACKS		**	117	126	87	74	90	89	107	115	109	125	
BCN CHANNEL		**	A	A	A	A	A	A	A	A	A	A	A

LEGEND	
#	ATCBI-5 WITH ATCRBS ANTENNA
##	MODE S OPERATING IN ATCRBS MODE WITH ATCRBS ANTENNA
*	OUT OF TOLERANCE (FAIL)
**	NO QARS DATA AVAILABLE

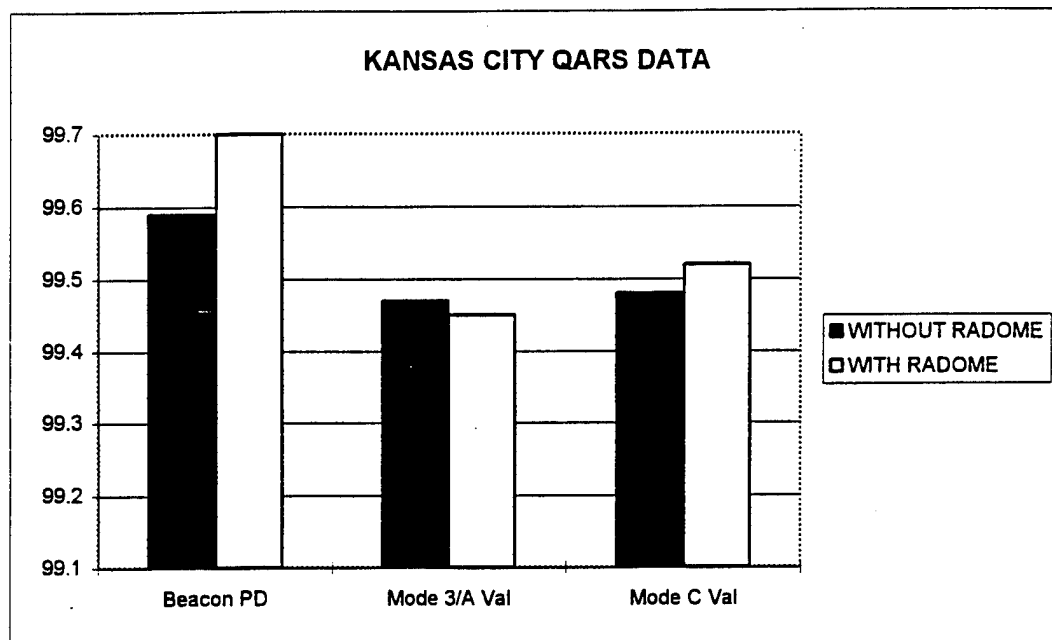
KANSAS CITY (ZKC) QARS DATA FOR ROCKVILLE BOS (QJM) WITH RADOME

DATE		11/13/95	11/14/95	11/15/95	11/16/95	11/17/95	11/18/95	11/19/95	11/20/95
	FAIL CRITERIA	###	###	###	###	###	###	###	###
BEACON									
Scans		11745	12113	10863	11180	8661	9457	14734	12895
Blip/Scan	<96%	99.7	99.5	99.4	99.5	99.7	99.5	99.8	99.9
Az-Split	> 1/2/2%	.0	.0	.0	.0	.0	.0	.0	.0
Rng-Split	> 1/2/5%	.0	.0	.0	.0	.0	.0	.0	.0
Ring Around	> 5%	.0	.0	.0	.0	.0	.0	.0	.0
Reflections	> 2%	.0	.0	.0	.0	.0	.0	.0	.0
Code Zeros	> 5%	.0	.0	.0	.0	.0	.1	.1	.1
Mode 3/A Rel	<96/97%	99.8	99.8	99.6	99.9	99.7	99.6	99.6	99.6
Mode 3/A Val	<96/97%	99.6	99.7	99.2	99.6	99.4	99.1	99.3	99.3
Mode C Rel	<98/97/95%	99.8	99.8	99.7	99.8	99.7	99.6	99.7	99.7
Mode C Val	<98/97/95%	99.6	99.7	99.5	99.6	99.5	99.2	99.4	99.3
Mode C Scans		11720	11694	10803	11127	8630	9409	14697	12884
Rng Dev	>0/1	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
Az Dev	>2.0/3.0	1.40	1.39	1.45	1.43	1.53	1.41	1.40	1.40
PE VERIFICATION									
#1 Rng Error	>0/1								
#1 Az Error	>2.0								
#1 Pct Rel	<90%								
#2 Rng Error	>0/1								
#2 Az Error	>2.0								
#2 Pct Rel	<90%								
#3 Rng Error	>0/1								
#3 Az Error	>2.0								
#3 Pct Rel	<90%								
#4 Rng Error	>0/1	+0/0	+0/0	+0/0	+0/0	+0/0	+0/0	+0/0	+0/0
#4 Az Error	>2.0	-0.2	+0.1	+0.1	-0.1	+0.2	+0.3	-0.1	+0.2
#4 Pct Rel	<90%	100.0	100.0	98.0	100.0	100.0	100.0	100.0	100.0
TOTAL TRACKS		92	96	95	95	83	80	107	97
BCN CHANNEL		A	A	A	A	A	A	A	A

KANSAS CITY (ZKC) QARS DATA FOR ROCKVILLE BOS (QJM) WITH RADOME (Continued)

DATE	11/21/95	11/22/95	11/23/95	11/24/95	11/25/95	11/26/95	11/27/95
FAIL CRITERIA	###	###	###	###	###	###	###
BEACON							
Scans	12366	15766	**	6953	10475	13835	11026
Blip/Scan	99.6	99.7	**	99.8	99.6	99.8	99.8
Az-Split	.0	.0	**	.0	.0	.0	.0
Rng-Split	.0	.0	**	.0	.0	.0	.0
Ring Around	.0	.0	**	.0	.0	.0	.0
Reflections	.0	.0	**	.0	.0	.0	.0
Code Zeros	.1	.1	**	.0	.0	.2	.1
Mode 3/A Rel	99.7	99.7	**	99.9	99.8	99.7	99.8
Mode 3/A Val	99.4	99.4	**	99.7	99.6	99.3	99.7
Mode C Rel	99.8	99.7	**	99.9	99.8	99.7	99.8
Mode C Val	99.5	99.5	**	99.8	99.6	99.4	99.7
Mode C Scans	12307	15751	**	6947	10434	13807	11001
Rng Dev	0/0	0/0	**	0/0	0/0	0/0	0/0
Az Dev	1.41	1.43	**	1.45	1.42	1.41	1.44
PE VERIFICATION							
#1 Rng Error	>0/1						
#1 Az Error	>2.0						
#1 Pct Rel	<90%						
#2 Rng Error	>0/1						
#2 Az Error	>2.0						
#2 Pct Rel	<90%						
#3 Rng Error	>0/1						
#3 Az Error	>2.0						
#3 Pct Rel	<90%						
#4 Rng Error	>0/1	+0/0	**	+0/0	+0/0	+0/0	+0/0
#4 Az Error	>2.0	+0.1	**	-0.2	+0.1	+0.1	+0.0
#4 Pct Rel	<90%	100.0	**	100.0	100.0	100.0	96.0
TOTAL TRACKS		95	**	66	74	123	95
BCN CHANNEL	A	A	**	A	A	A	A

LEGEND	
###	MODE S OPERATING IN ATCRBS MODE
**	NO QARS DATA AVAILABLE



APPENDIX D

REPORT

ROCKVILLE BOS (QJM) FIXED GROUND ANTENNA

RADOME (FGAR) REPLACEMENT EVALUATION

MINNEAPOLIS ARTCC (ZMP)



U.S. Department
of Transportation
**Federal Aviation
Administration**

Memorandum

Dakota-Minnesota SMO
508 Division Street
Farmington, MN 55024

Subject: INFORMATION: Rockville BOS (QJM) Fixed Ground Antenna
Radome (FGAR) Replacement Evaluation

Date: 0201 1996

From: Manager, Dakota-Minnesota SMO

**Reply to
Attn. of:** 6340-11

To: Associate Program Manager for Test, ACW-100B

As part of the Mode S project, the radome at Rockville BOS (QJM) was replaced. The national office requested that Minneapolis ARTCC (ZMP) compare QJM beacon performance before and after the radome replacement to verify that there are no adverse conditions that may affect air traffic control. The site was flight checked on 06 November 1995 by N77, a Beech King-Air, for the purpose of commissioning the Mode S antenna system. Also of concern was the possible scattering of the beam by the structural members of the new radome. Previously, QJM was situated on a temperate tower, sans radome. The following is a detailed summary of the comparison:

The collection of data prior to the radome replacement was on October 6, 1995, at 1530Z to 1630Z. The data after the replacement was collected on November 30, 1995, at 1530Z to 1630Z. The beacon was operating on channel B for both time periods. This data was used for all of the analysis performed.

Due to QJM being a beacon only site, no radar reinforcement was reported on the RARRE run. The comparison of the Altitude and Range charts showed a significant amount of outlier targets at 110 nmi and beyond. The majority of these were from 1365 - 2729 ACPs, with a small amount from 0 - 1365 ACPs.

The BFTA recording prior to the replacement shows 45 false targets in 41857 beacon returns for a rate of 0.10 percent. This rate is within tolerance. The recording after the replacement shows 19 false targets on 37999 beacon returns for a rate of 0.05 percent. There were no occurrences of Ringaround and the split rate was 0.10 percent prior to the replacement and 0.05 after. These indications are very favorable.

There were no occurrences of PRF interference or reflectors found on either of the reports.

The COMDIG program showed some improvement of parrot azimuth deviation. The parrots were outside the 2 ACP limit about 1.8 percent of the time on the data collected before the radome replacement and only 0.6 percent of the time after the replacement.

In conclusion, there were some changes in performance when the data collected before the radome replacement is compared to the data collected afterwards. The most significant of these is the occurrence of outlier targets. These changes are small and should not affect air traffic control. Some of these changes indicate improvement in the site's performance. One item of concern is the loss of coverage, at range, during the beginning of the inbound leg -- the aircraft did not appear until 183-3/8 nmi, as compared to 194-3/4 nmi on the outbound leg. This may be attributable to aircraft crab angle, which may have caused the aircraft beacon antenna to be semi-shielded by the propellers.

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If you should require any additional information, please contact Richard Harris, FDPSS or Tracy Kubat, Data System Specialist, at (612) 463-5606.

Alan D. Falkenstein
Alan D. Falkenstein

Attachments

APPENDIX E

REPORT

COLLECTION OF DATA IN SUPPORT OF FGAR OT&E
OPERATIONAL TESTING OF THE ROCKVILLE BOS (QJM)

DENVER ARTCC (ZDV)



Memorandum

Rocky Mountain SMO
2502 Clover Basin Drive, Ste D
Longmont, Colorado 80503

U. S. Department
of Transportation
Federal Aviation
Administration

Subject: INFORMATION: Collection of Data
in Support of FGAR OT&E
Operational Testing of the
Rockville BOS (QJM); ACT-310B Memo
of 9/13/95

Date: 1/19/96

From: Manager, Rocky Mountain SMO

Reply to
Attn. of:

To: Associate Program Manager, ACT-310B

In support of the Rockville (QJM) fixed ground antenna radome (FGAR) Operational Test and Evaluation (OT&E) Longmont SSC (ZDV) performed analysis of QJM radar data before and after installation of the FGAR. This analysis is intended to help determine whether or not the new radome causes an adverse impact to air traffic operations.

Overall, the data showed an improvement in performance with a sharply reduced false target rate after the FGAR installation. The incidence of azimuth deviations of the permanent echo also decreased following the FGAR installation and may be attributed to an increase in average beacon permanent echo (BPE) run-length.

The beacon false target analysis (BFTA) program was used to analyze radar data from October 9, 1995, and December 6, 1995. The following is a comparison of the results:

	<u>False Targets</u>	<u>Bcn Tgts Analyzed</u>	<u>False Tgt Rate</u>	<u>Target Split Rate</u>	<u>Ringaround Rate</u>
10/09	484	80445	.60	0.23	0.36
12/06	225	489397	.04	0.04	0.00

The common digitizer (COMDIG) program was used to analyze 9 hours of recorded radar data on each of the above test dates. COMDIG indicated consistent BPE run-length both before and after the FGAR installation with average run-length increasing from

36-42 azimuth change pulses (ACP's) to 38-46 ACP's. During this 9-hour period, there were 45 BPE azimuth deviations prior to the FGAR installation compared to 10 BPE azimuth deviations after the radome replacement.

In addition, current daily quick analysis of radar sites (QARS) program runs on QJM are consistently well within parameters, with the blip/scan ratio, mode C and mode 3/A reliability and validation percentages in the upper 99 percentile.

In summary, it is evident that the Rockville, NE, long-range radar (QJM) performance has improved since the FGAR was installed in October. Two key areas of radar beacon performance (false target rates and azimuth deviations) showed marked improvement following the radome replacement.

If you should require additional information, please contact Tom Schmidt, ATSS, Longmont En Route SSC, at (303) 651-4665.



Gary H. Mattson

CC:
Great Plains SMO
RKM SMOC
ANM-450
Tom Schmidt
SMMC

APPENDIX F

REPORT

ROCKVILLE (QJM) LONG RANGE RADAR

RADOME REPLACEMENT PROGRAM

KANSAS CITY ARTCC (ZKC)



U.S. Department
of Transportation

Federal Aviation
Administration

Memorandum

Subject: **INFORMATION: ROCKVILLE (QJM) Long Range
Radar Radome Replacement Evaluation**

Date: November 29, 1995

From: Area Operations Manager, Kansas City ARTCC AFS
250 South Rodgers Road, Olathe, KS 66062-1708

Reply to
Attn. of: Supervisor, Computer Resource Management System
Support Center (CRM SSC), Kansas City ARTCC

To: Mr. Leonard H. Baker, ACT-310B
Associate Program Manager for Test
FAA Technical Center
Atlantic City International Airport, NJ 08405

The Fixed Ground Antenna Radome (FGAR) was replaced during October of 1995 as part of a National Mode-S ARSR upgrade project. The Associate Program Manager for Test (APMT), ACT-310B, in his Memorandum of September 13, 1995 requested that the Great Plains SMO Manager arrange support at the Kansas City Air Route Traffic Control Center (ARTCC) for the collection of data in support of the FGAR OT&E Operational Testing of the Rockville BOS (QJM).

This request included:

1. Daily faxing of the Quick Analysis of Radar Sites (QARS) summary Sheet, showing the Rockville DOS (QJM), to the Test Director (TD) starting on October 1, 1995 through November 27, 1995. This was performed on all days that the Rockville ARSR was available to NAS at our 1800Z QARS time.
2. Run the Beacon False Target Analysis (BFTA) Program on data received from the Rockville BOS (QJM) and evaluate the program data obtained, without the FGAR installed and after installation, with the FGAR installed. These programs were run on every day the Rockville BOS was available during the testing period.
3. Run the Common Digitizer Data Reduction (COMDIG) Program on data received from the Rockville BOS (QJM) before and after the FGAR installation with regards to the position of the Beacon "Parrots". The requested data was collected using the COMDIG program on October 1, 1995, the first day of the preinstallation testing and on November 27, 1995, the last day of the postinstallation testing and comparisons were performed to determine if there was any change in the position of the Beacon "Parrots".

4. That the Kansas City ARTCC Technical Support Staff prepare a memorandum report based on the evaluation based on the requested data collected. It was requested that the report provide an evaluation of whether the data received from Rockville BOS (QJM) has improved, been degraded, or remained the same after the installation of the FGAR. This memorandum and the following report is in support of this request.

Results of Data Collected on Rockville (QJM) from October 1st Through November 27th

QARS DATA: Average Blip/Scan Rates

BEFORE: 99.6%

AFTER: 99.7%

BFTA DATA:	Average Split Rate	Average Ringaround	Average Reflections	Average PRF Interference
BEFORE:	.12	None	None	None
AFTER:	.05	None	None	None

COMDIG DATA:	Beacon Parrot 1275 Locations				
	Range	Azimuth	Beacon	Target Run	
	N.M.1/8	Degrees	ACPS	Altitude	Length
BEFORE:	19 3	237.216	2700	- 200	36
AFTER:	19 3	237.128	2698	- 100	36

EVALUATION:

During the October preinstallation 30 day evaluation period there were only 13 days that Rockville BOS (QJM) was available (5-9 & 13-21 OCT.), Therefore we used only 13 days of the post-installation 30 day evaluation period's data to obtain the same sample size for both data sets

Of the variables that we tested using the QARS, BFTA and COMDIG programs only two showed a significant difference the QARS Split Rate decreased and the COMDIG 1275 Beacon parrot decreased in altitude 100 feet. Halving the Split Rate was an improvement and further analysis of the 1273 and 1274 Beacon parrots revealed that their altitude remained at a - 900 after the FGAR upgrade. We concluded that the change in the 1275 altitude must of been an adjustment of the parrot itself before the Flight Check performed on October 7th at 1800Z.

To sum up our evaluation in the terms requested, Rockville BOS (QJM) has improved since the FGAR installation.

If additional information is required, please contact Merritt Markussen, the Supervisor of the Computer Resource Management System Support Center (CRM SSC) or Lawrence H. Patrick, RDAS System Specialist at the Kansas City ARTCC at 913-791-8665 or 913-791-8663 respectively.

for *Mary A. Embellig*
 Leon Hogan, Area Operations Manager
 Kansas City ARTCC AFS

APPENDIX G

FLIGHT CHECK

PRESENTATION PLOTS AND DATA

FLIGHT CHECK
PRESENTATION PLOTS AND DATA

The Minneapolis ARTCC (ZMP) recorded the Rockville BOS (QJM) Mode S commissioning flight check data. The ARTCC TSS engineers plotted and analyzed the data using the PLOTCD program. The following are: (1) the polar and "zoomed" polar presentation plots produced by the PLOTCD program, and (2) the CD RECORD flight check data.

NOTE

An asterisk (*) following a beacon code, FLAGS column, of the CD RECORD data, indicates more than five messages per scan.

QJH 01,02,03

RECORDED:
11/06/95

PLOTCD

VERSION 69
(C)1995 PDS

FILENAME: QJM1106C.MX6

SCANS: 1 THROUGH 909

Mode 3/A Code 4555

RdrBcn ☐ Disabled

Radar ☐ Disabled

Beacon ☐ Enabled

UX ☒ Disabled

Altitude = -1000 to 100000 ft.

RdrBcn count = 0

Beacon count = 286

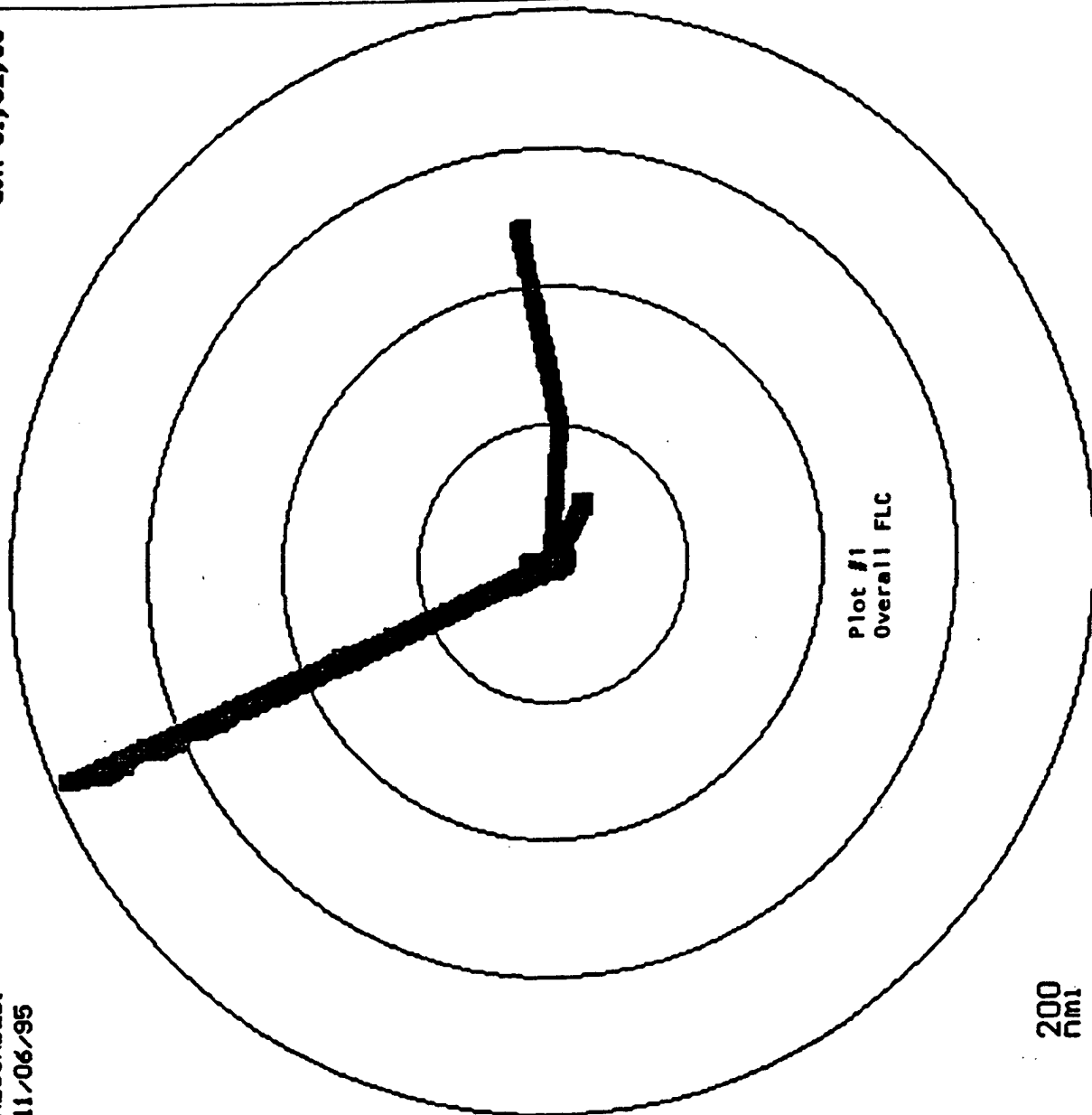
Radar count = 0

UX count = 0

Radar = 0.0 %

Reinforced

[F1] FILE [Alt-F1] HELP
[F2] ZOOM [Alt-F2] NOTE
[F3] TARGET [Alt-F3] ID
[F4] SCANS [Alt-F4] SETUP
[F5] RANGE [Alt-F5] STATS
[F9] PRINT [+/-] STEP
[F10] QUIT



CD RECORD 11/06/95 001 002 003 QJM 004 005 006 XYZ
 QJM MODE/S FLIGHT CHECK 11-06-95

SCAN	MSG	FLAGS	RNG	AZ	3/A	ALT	RL	TIME	PORT	DELTA
1	BEACON	3C	121/ 7	965	4555	10300	40	15:00:56.3	01	0.0
2	BEACON	3C	121/ 3	958	4555	10700	38	15:01:08.3	01	12.0
3	BEACON	3C	120/ 7	960	4555	11000	48	15:01:20.3	01	12.0
4	BEACON	3C	120/ 3	961	4555	11600	46	15:01:32.4	01	12.1
5	BEACON	3C	119/ 7	960	4555	12000	50	15:01:44.4	01	12.0
6	BEACON	3C	119/ 2	961	4555	12200	50	15:01:56.5	01	12.1
7	BEACON	3C*	118/ 6	960	4555	12200	48	15:02:08.5	01	12.0
8	BEACON	3C	118/ 0	961	4555	12200	50	15:02:20.6	01	12.1
9	BEACON	3C	117/ 3	960	4555	12200	52	15:02:32.6	01	12.0
10	BEACON	3C	116/ 5	960	4555	12200	46	15:02:44.6	01	12.0
11	BEACON	3C	115/ 7	962	4555	12200	50	15:02:56.7	01	12.1
12	BEACON	3C	115/ 1	963	4555	12200	46	15:03:08.8	01	12.1
13	BEACON	3C*	114/ 3	962	4555	12200	44	15:03:20.8	01	12.0
14	BEACON	3C	113/ 5	963	4555	12200	40	15:03:32.8	01	12.0
15	BEACON	3C	112/ 7	965	4555	12200	32	15:03:44.8	01	12.0
16	BEACON	3C	112/ 0	965	4555	12200	38	15:03:56.9	01	12.1
17	BEACON	3C	111/ 2	965	4555	12200	32	15:04:08.9	01	12.0
18	BEACON	3C	110/ 4	966	4555	12200	26	15:04:20.9	01	12.0
19	BEACON	3C	109/ 5	966	4555	12200	34	15:04:33.0	01	12.1
20	BEACON	3C	108/ 7	967	4555	12200	34	15:04:45.1	01	12.1
21	BEACON	3C	108/ 0	967	4555	12200	28	15:04:57.1	01	12.0
22	BEACON	3C	107/ 2	966	4555	12200	32	15:05:09.2	01	12.1
23	BEACON	3C	106/ 3	968	4555	12300	26	15:05:21.2	01	12.0
28	BEACON	3C	102/ 3	974	4555	12200	38	15:06:21.5	01	60.3
29	BEACON	3C	101/ 5	973	4555	12200	44	15:06:33.5	01	12.0
30	BEACON	3C	100/ 6	972	4555	12200	46	15:06:45.5	01	12.0
31	BEACON	3C	99/ 7	974	4555	12200	50	15:06:57.6	01	12.1
32	BEACON	3C	99/ 1	975	4555	12200	46	15:07:09.6	01	12.0
33	BEACON	3C	98/ 2	976	4555	12200	48	15:07:21.7	01	12.1
34	BEACON	3C*	97/ 4	976	4555	12200	46	15:07:33.8	01	12.1
35	BEACON	3C	96/ 5	978	4555	12200	48	15:07:45.8	01	12.0
36	BEACON	3C	95/ 7	978	4555	12200	48	15:07:57.8	01	12.0
37	BEACON	3C	95/ 0	979	4555	12200	40	15:08:09.8	01	12.0
38	BEACON	3C	94/ 2	979	4555	12200	38	15:08:21.9	01	12.1
39	BEACON	3C	93/ 4	980	4555	12200	42	15:08:34.0	01	12.1
40	BEACON	3C	92/ 6	981	4555	12200	46	15:08:46.0	01	12.0
41	BEACON	3C	91/ 7	983	4555	12200	36	15:08:58.0	01	12.0
42	BEACON	3C	91/ 1	982	4555	12200	42	15:09:10.0	01	12.0
43	BEACON	3C*	90/ 3	985	4555	12300	42	15:09:22.1	01	12.1
44	BEACON	3C	89/ 5	984	4555	12200	46	15:09:34.2	01	12.1
45	BEACON	3C	88/ 7	984	4555	12200	50	15:09:46.2	01	12.0
46	BEACON	3C	88/ 1	986	4555	12200	48	15:09:58.3	01	12.1
47	BEACON	3C	87/ 4	987	4555	12200	50	15:10:10.3	01	12.0
48	BEACON	3C*	86/ 6	989	4555	12200	50	15:10:22.3	01	12.0
49	BEACON	3C	86/ 0	990	4555	12200	42	15:10:34.4	01	12.1
50	BEACON	3C	85/ 2	990	4555	12300	46	15:10:46.5	01	12.1
51	BEACON	3C	84/ 4	990	4555	12300	36	15:10:58.4	01	11.9
52	BEACON	3C	83/ 6	990	4555	12200	44	15:11:10.5	01	12.1
53	BEACON	3C	83/ 0	993	4555	12200	42	15:11:22.5	01	12.0
54	BEACON	3C	82/ 2	994	4555	12200	46	15:11:34.6	01	12.1
55	BEACON	3C	81/ 4	995	4555	12200	50	15:11:46.7	01	12.1
56	BEACON	3C	80/ 7	996	4555	12200	50	15:11:58.7	01	12.0
57	BEACON	3C	80/ 1	997	4555	12200	50	15:12:10.8	01	12.1
58	BEACON	3C	79/ 3	998	4555	12200	48	15:12:22.8	01	12.0
59	BEACON	3C	78/ 5	1000	4555	12200	46	15:12:34.8	01	12.0

60 BEACON	3C*	77/ 7	999	4555	12200	42 15:12:46.9	01	12.1
61 BEACON	C	77/ 1	1002	4555	12200	42 15:12:58.9	01	12.0
62 BEACON	3C	76/ 3	1002	4555	12300	46 15:13:11.0	01	12.1

CD RECORD 11/06/95 001 002 003 QJM 004 005 006 XYZ
QJM MODE/S FLIGHT CHECK 11-06-95

SCAN	MSG	FLAGS	RNG	AZ	3/A	ALT	RL	TIME	PORT	DELTA
63	BEACON	3C	75/ 5	1005	4555	12200	46	15:13:23.0	01	12.0
64	BEACON	3C	74/ 7	1004	4555	12200	46	15:13:35.0	01	12.0
65	BEACON	3C*	74/ 2	1004	4555	12200	42	15:13:47.1	01	12.1
66	BEACON	3C	73/ 4	1006	4555	12200	40	15:13:59.2	01	12.1
67	BEACON	3C	72/ 6	1006	4555	12200	42	15:14:11.3	01	12.1
68	BEACON	3C*	72/ 0	1008	4555	12200	40	15:14:23.3	01	12.0
69	BEACON	3C	71/ 2	1012	4555	12200	42	15:14:35.4	01	12.1
70	BEACON	3C	70/ 4	1012	4555	12200	42	15:14:47.4	01	12.0
71	BEACON	3C	69/ 6	1012	4555	12200	42	15:14:59.4	01	12.0
72	BEACON	3C*	69/ 1	1016	4555	12200	46	15:15:11.5	01	12.1
73	BEACON	3C	68/ 3	1017	4555	12200	46	15:15:23.5	01	12.0
74	BEACON	3C	67/ 5	1019	4555	12200	44	15:15:35.5	01	12.0
75	BEACON	3C	66/ 7	1021	4555	12200	42	15:15:47.6	01	12.1
76	BEACON	3C	66/ 1	1021	4555	12200	52	15:15:59.6	01	12.0
77	BEACON	3C	65/ 3	1023	4555	12200	50	15:16:11.7	01	12.1
78	BEACON	3C	64/ 5	1025	4555	12200	44	15:16:23.7	01	12.0
79	BEACON	3C	63/ 7	1026	4555	12200	44	15:16:35.8	01	12.1
80	BEACON	3C	63/ 2	1027	4555	12200	48	15:16:47.8	01	12.0
81	BEACON	3C	62/ 4	1029	4555	12200	48	15:16:59.9	01	12.1
82	BEACON	3C	61/ 6	1031	4555	12200	40	15:17:11.9	01	12.0
83	BEACON	3C	61/ 0	1033	4555	12200	46	15:17:24.0	01	12.1
84	BEACON	3C	60/ 2	1035	4555	12200	48	15:17:36.0	01	12.0
85	BEACON	3C	59/ 4	1036	4555	12200	42	15:17:48.1	01	12.1
86	BEACON	3C*	58/ 6	1038	4555	12200	42	15:18:00.1	01	12.0
87	BEACON	3C*	58/ 0	1039	4555	12200	48	15:18:12.2	01	12.1
88	BEACON	3C*	57/ 2	1041	4555	12200	48	15:18:24.2	01	12.0
89	BEACON	3C	56/ 5	1043	4555	12200	46	15:18:36.2	01	12.0
90	BEACON	3C*	55/ 7	1046	4555	12200	42	15:18:48.3	01	12.1
91	BEACON	3C	55/ 1	1048	4555	12200	42	15:19:00.4	01	12.1
92	BEACON	3C	54/ 3	1050	4555	12200	42	15:19:12.4	01	12.0
93	BEACON	3C	53/ 5	1052	4555	12200	46	15:19:24.5	01	12.1
94	BEACON	3C	53/ 0	1054	4555	12200	42	15:19:36.5	01	12.0
95	BEACON	3C	52/ 2	1057	4555	12200	46	15:19:48.5	01	12.0
96	BEACON	3C	51/ 4	1060	4555	12200	42	15:20:00.6	01	12.1
97	BEACON	3C	50/ 6	1063	4555	12200	46	15:20:12.7	01	12.1
98	BEACON	3C*	50/ 0	1066	4555	12100	46	15:20:24.7	01	12.0
99	BEACON	3C	49/ 2	1068	4555	11900	48	15:20:36.8	01	12.1
100	BEACON	3C	48/ 4	1069	4555	11500	48	15:20:48.8	01	12.0
101	BEACON	3C	47/ 5	1067	4555	11300	46	15:21:00.8	01	12.0
102	BEACON	3C	46/ 7	1065	4555	11100	48	15:21:12.9	01	12.1
103	BEACON	3C	46/ 0	1065	4555	11000	46	15:21:24.9	01	12.0
104	BEACON	3C	45/ 2	1066	4555	10800	46	15:21:37.0	01	12.1
105	BEACON	3C	44/ 4	1065	4555	10700	48	15:21:49.0	01	12.0
106	BEACON	3C	43/ 5	1064	4555	10400	44	15:22:01.0	01	12.0
107	BEACON	3C	42/ 7	1065	4555	10200	48	15:22:13.1	01	12.1
108	BEACON	3C	42/ 0	1064	4555	9900	48	15:22:25.1	01	12.0
109	BEACON	3C	41/ 2	1064	4555	9600	48	15:22:37.2	01	12.1
110	BEACON	3C	40/ 3	1064	4555	9400	40	15:22:49.2	01	12.0
111	BEACON	3C	39/ 5	1064	4555	9100	50	15:23:01.3	01	12.1
112	BEACON	3C	38/ 6	1063	4555	8900	48	15:23:13.3	01	12.0
113	BEACON	3C	38/ 0	1064	4555	8600	46	15:23:25.4	01	12.1
114	BEACON	3C	37/ 1	1064	4555	8300	48	15:23:37.4	01	12.0
115	BEACON	3C	36/ 2	1064	4555	8100	46	15:23:49.5	01	12.1
116	BEACON	3C*	35/ 3	1063	4555	7900	42	15:24:01.5	01	12.0
117	BEACON	3C	34/ 5	1064	4555	7700	40	15:24:13.5	01	12.0

118	BEACON	3C	33/ 6	1065	4555	7400	54 15:24:25.6	01	12.1
119	BEACON	3C	32/ 7	1064	4555	7100	50 15:24:37.6	01	12.0
120	BEACON	3C	32/ 1	1065	4555	6900	48 15:24:49.7	01	12.1

CD RECORD 11/06/95 001 002 003 QJM 004 005 006 XYZ
QJM MODE/S FLIGHT CHECK 11-06-95

SCAN	MSG	FLAGS	RNG	AZ	3/A	ALT	RL	TIME	PORT	DELTA
121	BEACON	3C	31/ 2	1063	4555	6700	50	15:25:01.7	01	12.0
122	BEACON	3C	30/ 3	1065	4555	6300	50	15:25:13.7	01	12.0
123	BEACON	3C	29/ 4	1064	4555	6000	46	15:25:25.8	01	12.1
124	BEACON	3C	28/ 6	1062	4555	6100	50	15:25:37.9	01	12.1
125	BEACON	3C	28/ 0	1063	4555	6300	36	15:25:49.9	01	12.0
126	BEACON	3C	27/ 2	1061	4555	6300	44	15:26:01.9	01	12.0
127	BEACON	3C	26/ 4	1061	4555	6500	50	15:26:14.0	01	12.1
128	BEACON	3C	25/ 6	1061	4555	6500	48	15:26:26.0	01	12.0
129	BEACON	3C	25/ 1	1061	4555	6400	42	15:26:38.0	01	12.0
130	BEACON	3C	24/ 3	1062	4555	6200	50	15:26:50.1	01	12.1
131	BEACON	3C	23/ 5	1062	4555	5800	48	15:27:02.1	01	12.0
132	BEACON	3C	22/ 7	1064	4555	5500	52	15:27:14.2	01	12.1
133	BEACON	3C	22/ 0	1066	4555	5100	52	15:27:26.2	01	12.0
134	BEACON	3C	21/ 2	1064	4555	4700	46	15:27:38.3	01	12.1
135	BEACON	3C	20/ 3	1062	4555	4300	50	15:27:50.3	01	12.0
136	BEACON	3C	19/ 4	1063	4555	4100	48	15:28:02.3	01	12.0
137	BEACON	3C	18/ 6	1064	4555	3800	52	15:28:14.4	01	12.1
138	BEACON	3C	17/ 7	1063	4555	3500	48	15:28:26.4	01	12.0
139	BEACON	3C	17/ 0	1062	4555	3300	50	15:28:38.5	01	12.1
140	BEACON	3C	16/ 1	1062	4555	3300	46	15:28:50.5	01	12.0
141	BEACON	3C	15/ 3	1064	4555	3200	44	15:29:02.5	01	12.0
142	BEACON	3C	14/ 5	1062	4555	3200	26	15:29:14.6	01	12.1
143	BEACON	3C	13/ 6	1061	4555	3200	48	15:29:26.6	01	12.0
144	BEACON	3C	13/ 0	1061	4555	3200	40	15:29:38.7	01	12.1
145	BEACON	3C	12/ 2	1062	4555	3200	46	15:29:50.8	01	12.1
146	BEACON	3C	11/ 5	1060	4555	3200	46	15:30:02.8	01	12.0
147	BEACON	3C	10/ 7	1062	4555	3200	48	15:30:14.8	01	12.0
148	BEACON	3C	10/ 1	1060	4555	3200	42	15:30:26.9	01	12.1
149	BEACON	3C	9/ 3	1062	4555	3200	32	15:30:38.9	01	12.0
150	BEACON	3C	8/ 5	1064	4555	3200	22	15:30:50.9	01	12.0
151	BEACON	3C	8/ 0	1059	4555	3200	38	15:31:03.0	01	12.1
152	BEACON	3C	7/ 2	1057	4555	3200	40	15:31:15.0	01	12.0
153	BEACON	3C	6/ 4	1058	4555	3200	44	15:31:27.1	01	12.1
154	BEACON	3C	5/ 7	1057	4555	3200	40	15:31:39.1	01	12.0
155	BEACON	3C	5/ 1	1056	4555	3200	46	15:31:51.2	01	12.1
156	BEACON	3C	4/ 3	1058	4555	3200	40	15:32:03.2	01	12.0
157	BEACON	3C	3/ 5	1054	4555	3200	44	15:32:15.2	01	12.0
158	BEACON	3C	3/ 0	1052	4555	3200	48	15:32:27.3	01	12.1
159	BEACON	3C	2/ 2	1048	4555	3200	50	15:32:39.3	01	12.0
160	BEACON	3C	1/ 4	1038	4555	3200	46	15:32:51.3	01	12.0
161	BEACON	3C	0/ 7	1027	4555	3200	52	15:33:03.4	01	12.1
162	BEACON	3C	0/ 2	761	4555	3100	48	15:33:14.6	01	11.2
162	BEACON	3C	0/ 3	3523	4555	3100	50	15:33:22.7	01	8.1
163	BEACON	3C	0/ 6	3128	4555	3200	48	15:33:33.6	01	10.9
164	BEACON	3C	0/ 7	2789	4555	3100	50	15:33:44.7	01	11.1
165	BEACON	3C	0/ 7	2461	4555	3000	48	15:33:55.7	01	11.0
166	BEACON	3C	0/ 4	2181	4555	2800	50	15:34:06.9	01	11.2
167	BEACON	3C	0/ 1	1535	4555	2700	38	15:34:17.1	01	10.2
167	BEACON	3C	0/ 2	4031	4555	2700	46	15:34:24.4	01	7.3
168	BEACON	3C	0/ 5	3606	4555	3300	48	15:34:35.2	01	10.8
169	BEACON	3C	0/ 7	3271	4555	3800	46	15:34:46.3	01	11.1
170	BEACON	3C	1/ 0	2949	4555	4200	40	15:34:57.3	01	11.0
171	BEACON	3C	1/ 2	2657	4555	4400	42	15:35:08.6	01	11.3
172	BEACON	3C	1/ 3	2393	4555	4700	42	15:35:19.8	01	11.2
173	BEACON	3C	1/ 4	2151	4555	5100	46	15:35:31.2	01	11.4

174 BEACON	3C	1/ 5	1920	4555	5400	46 15:35:42.6	01	11.4
175 BEACON	3C	1/ 5	1696	4555	5600	40 15:35:53.9	01	11.3
176 BEACON	3C	1/ 4	1466	4555	5700	48 15:36:05.3	01	11.4

CD RECORD 11/06/95 001 002 003 QJM 004 005 006 XYZ
QJM MODE/S FLIGHT CHECK 11-06-95

SCAN	MSG	FLAGS	RNG	AZ	3/A	ALT	RL	TIME	PORT	DELTA
177	BEACON	3C	1/ 3	1226	4555	5800	44	15:36:16.6	01	11.3
178	BEACON	3C	1/ 1	949	4555	5700	50	15:36:27.9	01	11.3
179	BEACON	3C	0/ 7	579	4555	5700	50	15:36:38.8	01	10.9
180	BEACON	3C	0/ 6	3328	4555	5700	46	15:36:59.0	01	20.2
181	BEACON	3C	1/ 0	2907	4555	5700	52	15:37:09.7	01	10.7
182	BEACON	3C	1/ 3	2626	4555	5700	52	15:37:21.0	01	11.3
183	BEACON	3C	1/ 6	2418	4555	5700	50	15:37:32.4	01	11.4
184	BEACON	3C	2/ 2	2278	4555	5900	48	15:37:44.0	01	11.6
185	BEACON	3C	2/ 5	2153	4555	6100	48	15:37:55.7	01	11.7
186	BEACON	3C	2/ 7	2012	4555	6200	38	15:38:07.3	01	11.6
187	BEACON	3C	3/ 0	1878	4555	6200	50	15:38:19.0	01	11.7
188	BEACON	3C	2/ 7	1736	4555	6100	44	15:38:30.6	01	11.6
189	BEACON	3C	2/ 5	1592	4555	5900	48	15:38:42.2	01	11.6
190	BEACON	3C	2/ 2	1456	4555	5800	38	15:38:53.9	01	11.7
191	BEACON	3C	1/ 6	1334	4555	5700	50	15:39:05.5	01	11.6
192	BEACON	3C	1/ 2	1171	4555	5700	50	15:39:17.1	01	11.6
193	BEACON	3C	0/ 6	937	4555	5700	50	15:39:28.6	01	11.5
195	BEACON	3C	1/ 0	2668	4555	5700	60	15:39:57.7	01	29.1
196	BEACON	3C	1/ 3	2488	4555	5700	52	15:40:09.2	01	11.5
197	BEACON	3C	1/ 7	2386	4555	5700	50	15:40:21.0	01	11.8
198	BEACON	3C	2/ 3	2312	4555	5700	50	15:40:32.8	01	11.8
199	BEACON	3C	2/ 7	2261	4555	5700	50	15:40:44.6	01	11.8
200	BEACON	3C	3/ 3	2223	4555	5700	50	15:40:56.6	01	12.0
201	BEACON	3C	4/ 0	2193	4555	5700	52	15:41:08.5	01	11.9
202	BEACON	3C	4/ 4	2150	4555	5700	42	15:41:20.4	01	11.9
204	BEACON	3C	5/ 0	1995	4555	5700	52	15:41:44.1	01	23.7
205	BEACON	3C	4/ 7	1916	4555	5700	52	15:41:55.9	01	11.8
206	BEACON	3C	4/ 4	1850	4555	5700	48	15:42:07.8	01	11.9
207	BEACON	3C	4/ 0	1811	4555	5700	48	15:42:19.7	01	11.9
208	BEACON	3C	3/ 4	1822	4555	5700	50	15:42:31.8	01	12.1
209	BEACON	3C	3/ 1	1906	4555	5700	48	15:42:44.1	01	12.3
210	BEACON	3C	3/ 1	2018	4555	5700	26	15:42:56.4	01	12.3
211	BEACON	3C	3/ 4	2140	4555	5700	20	15:43:08.8	01	12.4
212	BEACON	3C	4/ 1	2147	4555	5500	38	15:43:20.9	01	12.1
215	BEACON	3C	5/ 6	1970	4555	4400	50	15:43:56.5	01	35.6
216	BEACON	3C	6/ 0	1885	4555	4000	54	15:44:08.3	01	11.8
217	BEACON	3C	6/ 0	1805	4555	3800	50	15:44:20.1	01	11.8
218	BEACON	3C	5/ 6	1733	4555	3700	50	15:44:31.9	01	11.8
219	BEACON	3C	5/ 2	1675	4555	3600	52	15:44:43.8	01	11.9
220	BEACON	3C	4/ 5	1642	4555	3500	48	15:44:55.7	01	11.9
221	BEACON	3C	4/ 0	1645	4555	3500	48	15:45:07.8	01	12.1
222	BEACON	3C	3/ 2	1652	4555	3400	52	15:45:19.8	01	12.0
223	BEACON	3C	2/ 5	1668	4555	3400	54	15:45:32.0	01	12.2
224	BEACON	3C	1/ 7	1691	4555	3400	52	15:45:44.1	01	12.1
225	BEACON	3C	1/ 2	1737	4555	3400	52	15:45:56.3	01	12.2
226	BEACON	3C	0/ 5	1855	4555	3400	58	15:46:08.6	01	12.3
227	BEACON	3C	0/ 4	4061	4555	3400	58	15:46:27.2	01	18.6
228	BEACON	3C	1/ 1	4024	4555	3400	54	15:46:39.2	01	12.0
229	BEACON	3C	1/ 6	3961	4555	3400	54	15:46:51.0	01	11.8
230	BEACON	3C	2/ 3	3913	4555	3400	48	15:47:02.9	01	11.9
231	BEACON	3C	3/ 0	3882	4555	3400	52	15:47:14.8	01	11.9
232	BEACON	3C	3/ 5	3863	4555	3400	50	15:47:26.9	01	12.1
233	BEACON	3C	4/ 2	3850	4555	3400	50	15:47:38.8	01	11.9
234	BEACON	3C	4/ 7	3845	4555	3400	52	15:47:50.9	01	12.1
235	BEACON	3C	5/ 5	3839	4555	3400	46	15:48:02.9	01	12.0

236 BEACON	3C	6/ 2	3838	4555	3400	52 15:48:14.9	01	12.0
237 BEACON	3C	6/ 7	3835	4555	3500	52 15:48:27.0	01	12.1
238 BEACON	3C	7/ 4	3834	4555	3600	48 15:48:39.0	01	12.0

CD RECORD 11/06/95 001 002 003 QJM 004 005 006 XYZ
QJM MODE/S FLIGHT CHECK 11-06-95

SCAN	MSG	FLAGS	RNG	AZ	3/A	ALT	RL	TIME	PORT	DELTA
239	BEACON	3C	8/ 2	3833	4555	3500	50	15:48:51.1	01	12.1
240	BEACON	3C	8/ 7	3831	4555	3500	50	15:49:03.1	01	12.0
241	BEACON	3C	9/ 5	3833	4555	3500	50	15:49:15.2	01	12.1
242	BEACON	3C	10/ 2	3833	4555	3500	54	15:49:27.2	01	12.0
243	BEACON	3C	11/ 0	3834	4555	3500	50	15:49:39.2	01	12.0
244	BEACON	3C	11/ 6	3832	4555	3400	48	15:49:52.3	01	12.1
245	BEACON	3C	12/ 3	3833	4555	3400	52	15:50:03.4	01	12.1
246	BEACON	3C	13/ 1	3832	4555	3500	50	15:50:15.4	01	12.0
247	BEACON	3C	13/ 7	3833	4555	3500	50	15:50:27.5	01	12.1
248	BEACON	3C	14/ 4	3835	4555	3500	52	15:50:39.5	01	12.0
249	BEACON	3C	15/ 2	3834	4555	3500	52	15:50:51.6	01	12.1
250	BEACON	3C	15/ 7	3832	4555	3500	48	15:51:03.6	01	12.0
251	BEACON	3C	16/ 4	3832	4555	3500	40	15:51:15.6	01	12.0
252	BEACON	3C	17/ 1	3831	4555	3500	46	15:51:27.7	01	12.1
253	BEACON	3C	17/ 5	3825	4555	3600	46	15:51:39.7	01	12.0
254	BEACON	3C	17/ 7	3807	4555	3500	50	15:51:51.7	01	12.0
255	BEACON	3C	17/ 6	3787	4555	3700	50	15:52:03.7	01	12.0
256	BEACON	3C	17/ 3	3771	4555	4000	48	15:52:15.7	01	12.0
257	BEACON	3C	16/ 6	3765	4555	4200	50	15:52:27.7	01	12.0
258	BEACON	3C	16/ 1	3762	4555	4400	46	15:52:39.8	01	12.1
259	BEACON	3C	15/ 4	3757	4555	4700	46	15:52:51.8	01	12.0
260	BEACON	3C	14/ 7	3752	4555	4900	44	15:53:03.8	01	12.0
261	BEACON	3C	14/ 1	3749	4555	5000	28	15:53:15.8	01	12.0
262	BEACON	3C	13/ 4	3745	4555	5100	42	15:53:27.9	01	12.1
263	BEACON	3C	12/ 6	3747	4555	5100	50	15:53:40.0	01	12.1
264	BEACON	3C	12/ 1	3745	4555	5000	48	15:53:52.0	01	12.0
265	BEACON	3C	11/ 3	3742	4555	4700	52	15:54:04.0	01	12.0
266	BEACON	3C	10/ 5	3734	4555	4300	52	15:54:16.0	01	12.0
267	BEACON	3C	9/ 7	3730	4555	4000	48	15:54:28.1	01	12.1
268	BEACON	3C	9/ 3	3752	4555	4000	54	15:54:40.2	01	12.1
269	BEACON	3C	9/ 2	3791	4555	3800	52	15:54:52.4	01	12.2
270	BEACON	3C	9/ 5	3819	4555	3800	50	15:55:04.5	01	12.1
271	BEACON	3C	10/ 1	3826	4555	3600	52	15:55:16.5	01	12.0
272	BEACON	3C	10/ 6	3828	4555	3600	52	15:55:28.6	01	12.1
273	BEACON	3C	11/ 3	3826	4555	3500	54	15:55:40.6	01	12.0
274	BEACON	3C	12/ 0	3824	4555	3600	54	15:55:52.7	01	12.1
275	BEACON	3C	12/ 4	3823	4555	3600	48	15:56:04.7	01	12.0
276	BEACON	3C	13/ 1	3824	4555	3600	42	15:56:16.7	01	12.0
277	BEACON	3C	13/ 7	3826	4555	3600	50	15:56:28.8	01	12.1
278	BEACON	3C	14/ 4	3828	4555	3700	48	15:56:40.9	01	12.1
279	BEACON	3C	15/ 2	3829	4555	3700	52	15:56:52.9	01	12.0
280	BEACON	3C*	16/ 0	3830	4555	3600	50	15:57:05.0	01	12.1
281	BEACON	3C	16/ 7	3831	4555	3600	48	15:57:17.0	01	12.0
282	BEACON	3C	17/ 5	3831	4555	3600	40	15:57:29.0	01	22.0
283	BEACON	3C	18/ 4	3831	4555	3600	50	15:57:41.1	01	12.1
284	BEACON	3C	19/ 2	3831	4555	3600	48	15:57:53.1	01	12.0
285	BEACON	3C	20/ 1	3832	4555	3600	48	15:58:05.2	01	12.1
286	BEACON	3C	20/ 7	3831	4555	3600	50	15:58:17.3	01	12.1
287	BEACON	3C	21/ 6	3832	4555	3600	48	15:58:29.3	01	12.0
288	BEACON	3C	22/ 4	3833	4555	3600	50	15:58:41.4	01	12.1
289	BEACON	3C	23/ 3	3833	4555	3600	54	15:58:53.4	01	12.0
290	BEACON	3C	24/ 1	3833	4555	3600	52	15:59:05.4	01	12.0
291	BEACON	3C	25/ 0	3833	4555	3600	52	15:59:17.5	01	12.1
292	BEACON	3C	25/ 7	3833	4555	3600	54	15:59:29.6	01	12.1
293	BEACON	3C	26/ 5	3832	4555	3600	52	15:59:41.6	01	12.0

294	BEACON	3C	27/ 4	3833	4555	3600	52 15:59:53.6	01	12.0
295	BEACON	3C	28/ 2	3832	4555	3600	52 16:00:05.6	01	12.0
296	BEACON	3C*	29/ 1	3832	4555	3600	52 16:00:17.6	01	12.0

CD RECORD 11/06/95 001 002 003 QJM 004 005 006 XYZ
QJM MODE/S FLIGHT CHECK 11-06-95

SCAN	MSG	FLAGS	RNG	AZ	3/A	ALT	RL	TIME	PORT	DELTA
297	BEACON	3C	29/ 7	3831	4555	3600	50	16:00:29.7	01	12.1
298	BEACON	3C	30/ 6	3831	4555	3600	50	16:00:41.7	01	12.0
299	BEACON	3C	31/ 4	3831	4555	3600	48	16:00:53.8	01	12.1
300	BEACON	3C	32/ 3	3830	4555	3600	50	16:01:05.8	01	12.0
301	BEACON	3C	33/ 1	3831	4555	3600	48	16:01:17.8	01	12.0
302	BEACON	3C	34/ 0	3831	4555	3600	46	16:01:29.9	01	12.1
303	BEACON	3C	34/ 6	3830	4555	3600	46	16:01:41.9	01	12.0
304	BEACON	3C	35/ 5	3830	4555	3600	42	16:01:54.0	01	12.1
305	BEACON	3C	36/ 4	3830	4555	3600	42	16:02:06.0	01	12.0
306	BEACON	3C*	37/ 2	3830	4555	3600	38	16:02:18.1	01	12.1
307	BEACON	3C	38/ 1	3830	4555	3600	38	16:02:30.1	01	12.0
308	BEACON	3C	38/ 7	3830	4555	3600	36	16:02:42.1	01	12.0
309	BEACON	3C	39/ 6	3831	4555	3600	32	16:02:54.2	01	12.1
310	BEACON	3C	40/ 5	3831	4555	3600	28	16:03:06.2	01	12.0
311	BEACON	3C	41/ 3	3832	4555	3600	22	16:03:18.3	01	12.1
312	BEACON	3C	42/ 2	3839	4555	3600	12	16:03:30.3	01	12.0
316	BEACON	3C	45/ 3	3830	4555	4900	52	16:04:18.5	01	48.2
317	BEACON	3C	46/ 0	3832	4555	5400	54	16:04:30.5	01	12.0
318	BEACON	3C	46/ 5	3833	4555	5300	52	16:04:42.6	01	12.1
319	BEACON	3C	47/ 3	3832	4555	5300	52	16:04:54.7	01	12.1
320	BEACON	3C	48/ 1	3832	4555	5400	54	16:05:06.7	01	12.0
321	BEACON	3C	48/ 7	3832	4555	5400	52	16:05:18.7	01	12.0
322	BEACON	3C	49/ 5	3833	4555	5400	52	16:05:30.8	01	12.1
323	BEACON	3C	50/ 3	3832	4555	5400	50	16:05:42.8	01	12.0
324	BEACON	3C	51/ 2	3832	4555	5400	52	16:05:54.9	01	12.1
325	BEACON	3C	52/ 0	3832	4555	5400	52	16:06:06.9	01	12.0
326	BEACON	3C	52/ 7	3831	4555	5400	50	16:06:18.9	01	12.0
327	BEACON	3C	53/ 6	3830	4555	5400	52	16:06:31.0	01	12.1
328	BEACON	3C	54/ 4	3831	4555	5400	52	16:06:43.0	01	12.0
329	BEACON	3C	55/ 3	3830	4555	5400	50	16:06:55.1	01	12.1
330	BEACON	3C	56/ 1	3830	4555	5400	48	16:07:07.1	01	12.0
331	BEACON	3C	57/ 0	3830	4555	5400	46	16:07:19.2	01	12.1
332	BEACON	3C	57/ 7	3830	4555	5400	46	16:07:31.2	01	12.0
333	BEACON	3C	58/ 6	3830	4555	5400	42	16:07:43.3	01	12.1
334	BEACON	3C	59/ 4	3830	4555	5400	42	16:07:55.3	01	12.0
335	BEACON	3C	60/ 3	3832	4555	5400	38	16:08:07.4	01	12.1
336	BEACON	3C	61/ 2	3830	4555	5400	38	16:08:19.4	01	12.0
337	BEACON	3C	62/ 0	3830	4555	5400	38	16:08:31.4	01	12.0
338	BEACON	3C	62/ 7	3830	4555	5400	32	16:08:43.5	01	12.1
339	BEACON	3C	63/ 6	3831	4555	5400	26	16:08:55.5	01	12.0
340	BEACON	3C	64/ 4	3833	4555	5400	20	16:09:07.6	01	12.1
341	BEACON	3C	65/ 3	3836	4555	5400	14	16:09:19.6	01	12.0
344	BEACON	3C	67/ 7	3832	4555	6200	36	16:09:55.8	01	36.2
345	BEACON	3C	68/ 4	3830	4555	7100	50	16:10:07.8	01	12.0
346	BEACON	3C	69/ 1	3831	4555	7300	52	16:10:19.9	01	12.1
347	BEACON	3C	69/ 7	3831	4555	7400	54	16:10:32.0	01	12.1
348	BEACON	3C	70/ 4	3830	4555	7400	52	16:10:44.0	01	12.0
349	BEACON	3C*	71/ 2	3830	4555	7400	50	16:10:56.0	01	12.0
350	BEACON	3C	72/ 0	3832	4555	7400	48	16:11:08.1	01	12.1
351	BEACON	3C	72/ 7	3831	4555	7400	50	16:11:20.1	01	12.0
352	BEACON	3C*	73/ 5	3831	4555	7400	46	16:11:32.2	01	12.1
353	BEACON	3C	74/ 4	3831	4555	7400	44	16:11:44.2	01	12.0
354	BEACON	3C*	75/ 2	3831	4555	7400	42	16:11:56.3	01	12.1
355	BEACON	3C	76/ 1	3831	4555	7400	42	16:12:08.3	01	12.0
356	BEACON	3C	77/ 0	3831	4555	7400	38	16:12:20.3	01	12.0

357 BEACON	3C	77/ 6	3831	4555	7400	38 16:12:32.4	01	12.1
358 BEACON	3C	78/ 5	3832	4555	7400	34 16:12:44.5	01	12.1
359 BEACON	3C	79/ 4	3832	4555	7400	34 16:12:56.5	01	12.0

CD RECORD 11/06/95 001 002 003 QJM 004 005 006 XYZ
QJM MODE/S FLIGHT CHECK 11-06-95

SCAN	MSG	FLAGS	RNG	AZ	3/A	ALT	RL	TIME	PORT	DELTA
360	BEACON	3C	80/ 3	3832	4555	7400	30	16:13:08.6	01	12.1
361	BEACON	3C	81/ 1	3835	4555	7400	24	16:13:20.6	01	12.0
362	BEACON	3C	82/ 0	3837	4555	7400	18	16:13:32.7	01	12.1
365	BEACON	3C	84/ 5	3839	4555	7900	14	16:14:08.8	01	36.1
366	BEACON	3C*	85/ 2	3833	4555	9300	46	16:14:20.9	01	12.1
367	BEACON	3C	85/ 6	3833	4555	10500	48	16:14:32.9	01	12.0
368	BEACON	3C	86/ 2	3833	4555	11000	48	16:14:45.0	01	12.1
369	BEACON	3C	86/ 5	3832	4555	11600	40	16:14:57.0	01	12.0
370	BEACON	3C	87/ 0	3833	4555	11900	50	16:15:09.0	01	12.0
371	BEACON	3C	87/ 4	3832	4555	12200	46	16:15:21.1	01	12.1
372	BEACON	3C	88/ 0	3831	4555	12300	44	16:15:33.2	01	12.1
373	BEACON	3C	88/ 5	3831	4555	12400	44	16:15:45.2	01	12.0
374	BEACON	3C	89/ 2	3833	4555	12400	46	16:15:57.2	01	12.0
375	BEACON	3C	90/ 0	3832	4555	12400	48	16:16:09.3	01	12.1
376	BEACON	3C	90/ 6	3832	4555	12400	48	16:16:21.3	01	12.0
377	BEACON	3C	91/ 5	3831	4555	12500	52	16:16:33.4	01	12.1
378	BEACON	3C	92/ 3	3831	4555	12400	54	16:16:45.4	01	12.0
379	BEACON	3C	93/ 2	3832	4555	12400	52	16:16:57.5	01	12.1
380	BEACON	3C	94/ 1	3832	4555	12400	48	16:17:09.5	01	12.0
381	BEACON	3C*	94/ 7	3831	4555	12400	50	16:17:21.6	01	12.1
382	BEACON	3C	95/ 6	3832	4555	12400	50	16:17:33.6	01	12.0
383	BEACON	3C	96/ 5	3832	4555	12400	54	16:17:45.7	01	12.1
384	BEACON	3C	97/ 4	3832	4555	12400	54	16:17:57.7	01	12.0
385	BEACON	3C	98/ 3	3831	4555	12400	52	16:18:09.8	01	12.1
386	BEACON	3C	99/ 2	3833	4555	12400	50	16:18:21.8	01	12.0
387	BEACON	3C	100/ 1	3833	4555	12400	50	16:18:33.9	01	12.1
388	BEACON	3C*	101/ 0	3832	4555	12400	52	16:18:45.9	01	12.0
389	BEACON	3C	101/ 7	3833	4555	12400	52	16:18:57.9	01	12.0
390	BEACON	3C	102/ 6	3832	4555	12400	52	16:19:10.0	01	12.1
391	BEACON	3C	103/ 4	3832	4555	12400	52	16:19:22.2	01	12.1
392	BEACON	3C	104/ 3	3832	4555	12400	48	16:19:34.1	01	12.0
393	BEACON	3C	105/ 3	3832	4555	12400	46	16:19:46.1	01	12.0
394	BEACON	3C	106/ 1	3832	4555	12400	48	16:19:58.2	01	12.1
395	BEACON	3C*	107/ 1	3832	4555	12400	44	16:20:10.2	01	12.0
396	BEACON	3C	108/ 0	3833	4555	12400	40	16:20:22.3	01	12.1
397	BEACON	3C	106/ 7	3833	4555	12400	40	16:20:34.3	01	12.0
398	BEACON	3C	109/ 6	3834	4555	12400	38	16:20:46.4	01	12.1
399	BEACON	3C	110/ 5	3833	4555	12400	36	16:20:58.5	01	12.1
400	BEACON	3C	111/ 4	3832	4555	12400	30	16:21:10.5	01	12.0
401	BEACON	3C	112/ 3	3832	4555	12400	28	16:21:22.5	01	12.0
402	BEACON	3C	113/ 2	3832	4555	12400	26	16:21:34.6	01	12.1
406	BEACON	3C	116/ 5	3836	4555	13300	22	16:22:22.8	01	48.2
407	BEACON	3C	117/ 3	3833	4555	14700	46	16:22:34.8	01	12.0
408	BEACON	3C	117/ 7	3833	4555	15400	48	16:22:46.9	01	12.1
409	BEACON	3C	118/ 3	3834	4555	15800	44	16:22:58.9	01	12.0
410	BEACON	3C	118/ 7	3832	4555	16200	50	16:23:11.0	01	12.1
411	BEACON	3C	119/ 4	3831	4555	16600	50	16:23:23.0	01	12.0
412	BEACON	3C	120/ 0	3833	4555	16800	48	16:23:35.1	01	12.1
413	BEACON	3C	120/ 5	3832	4555	17000	48	16:23:47.2	01	12.1
414	BEACON	3C	121/ 2	3833	4555	17300	48	16:23:59.2	01	12.0
415	BEACON	3C	121/ 7	3833	4555	17800	52	16:24:11.3	01	12.1
416	BEACON	3C	122/ 4	3832	4555	18400	50	16:24:23.3	01	12.0
417	BEACON	3C	123/ 1	3832	4555	19000	46	16:24:35.3	01	12.0
418	BEACON	3C	123/ 6	3831	4555	19600	32	16:24:47.4	01	12.1
419	BEACON	3C	124/ 2	3835	4555	20100	18	16:24:59.5	01	12.1

420 BEACON	3C	124/ 6	3833	4555	20500	26 16:25:11.5	01	12.0
421 BEACON	3C	125/ 3	3832	4555	20900	32 16:25:23.5	01	12.0
422 BEACON	3C	125/ 7	3832	4555	21300	36 16:25:35.6	01	12.1

CD RECORD 11/06/95 001 002 003 QJM 004 005 006 XYZ
 QJM MODE/S FLIGHT CHECK 11-06-95

SCAN	MSG	FLAGS	RNG	AZ	3/A	ALT	RL	TIME	PORT	DELTA
423	BEACON	3C	126/ 4	3831	4555	21800	38	16:25:47.7	01	12.1
424	BEACON	3C	127/ 0	3832	4555	22200	36	16:25:59.7	01	12.0
425	BEACON	3C	127/ 4	3834	4555	22700	38	16:26:11.8	01	12.1
426	BEACON	3C	128/ 1	3832	4555	22900	40	16:26:23.8	01	12.0
427	BEACON	3C	128/ 5	3834	4555	23000	42	16:26:35.9	01	12.1
428	BEACON	3C	129/ 3	3833	4555	23000	42	16:26:47.9	01	12.0
429	BEACON	3C	130/ 0	3832	4555	23000	40	16:27:00.0	01	12.1
430	BEACON	3C	130/ 7	3832	4555	23000	42	16:27:12.0	01	12.0
431	BEACON	3C	131/ 5	3832	4555	23000	32	16:27:24.1	01	12.1
432	BEACON	3C	132/ 4	3833	4555	23000	32	16:27:36.1	01	12.0
433	BEACON	3C	133/ 3	3833	4555	23000	36	16:27:48.2	01	12.1
434	BEACON	3C	134/ 2	3833	4555	23000	30	16:28:00.2	01	12.0
435	BEACON	3C	135/ 1	3832	4555	23000	36	16:28:12.3	01	12.1
436	BEACON	3C	136/ 1	3833	4555	23000	32	16:28:24.4	01	12.1
437	BEACON	3C	137/ 0	3832	4555	23000	30	16:28:36.4	01	12.0
438	BEACON	3C	138/ 0	3833	4555	23000	28	16:28:48.4	01	12.0
439	BEACON	3C	138/ 7	3833	4555	23000	40	16:29:00.5	01	12.1
440	BEACON	3C	139/ 7	3836	4555	23400	22	16:29:12.5	01	12.0
441	BEACON	3C	140/ 5	3833	4555	24500	24	16:29:24.6	01	12.1
442	BEACON	3C	141/ 3	3833	4555	25300	32	16:29:36.6	01	12.0
443	BEACON	3C	142/ 1	3833	4555	25800	32	16:29:48.7	01	12.1
444	BEACON	3C	142/ 6	3833	4555	26300	30	16:30:00.8	01	12.1
445	BEACON	3C	143/ 3	3833	4555	26800	30	16:30:12.8	01	12.0
446	BEACON	3C	144/ 0	3833	4555	27200	30	16:30:24.8	01	12.0
447	BEACON	3C	144/ 4	3833	4555	27600	30	16:30:36.9	01	12.1
448	BEACON	3C	145/ 1	3832	4555	27900	32	16:30:48.9	01	12.0
449	BEACON	3C	145/ 5	3834	4555	28200	32	16:31:01.0	01	12.1
450	BEACON	3C	146/ 2	3830	4555	28500	28	16:31:13.0	01	12.0
451	BEACON	3C	146/ 6	3832	4555	28800	38	16:31:25.1	01	12.1
452	BEACON	3C	147/ 2	3834	4555	29000	38	16:31:37.1	01	12.0
453	BEACON	3C	147/ 7	3832	4555	29300	32	16:31:49.2	01	12.1
454	BEACON	3C	148/ 3	3833	4555	29400	34	16:32:01.2	01	12.0
455	BEACON	3C	149/ 0	3833	4555	29700	32	16:32:13.3	01	12.1
456	BEACON	3C	149/ 4	3832	4555	29900	42	16:32:25.3	01	12.0
457	BEACON	3C	150/ 1	3834	4555	30200	40	16:32:37.4	01	12.1
458	BEACON	3C	150/ 5	3833	4555	30400	42	16:32:49.5	01	12.1
459	BEACON	3C	151/ 2	3834	4555	30700	42	16:33:01.5	01	12.0
460	BEACON	3C	151/ 6	3833	4555	30900	48	16:33:13.6	01	12.1
461	BEACON	3C	152/ 2	3834	4555	31100	46	16:33:25.6	01	12.0
462	BEACON	3C	152/ 7	3832	4555	31200	46	16:33:37.6	01	12.0
463	BEACON	3C	153/ 3	3832	4555	31300	44	16:33:49.7	01	12.1
464	BEACON	3C	154/ 0	3833	4555	31500	42	16:34:01.8	01	12.1
465	BEACON	3C	154/ 5	3833	4555	31700	44	16:34:13.8	01	12.0
466	BEACON	3C	155/ 1	3833	4555	31900	46	16:34:25.9	01	12.1
467	BEACON	3C	155/ 6	3833	4555	32000	48	16:34:37.9	01	12.0
468	BEACON	3C	156/ 2	3832	4555	32000	42	16:34:49.9	01	12.0
469	BEACON	3C	156/ 7	3833	4555	32000	36	16:35:02.0	01	12.1
470	BEACON	3C	157/ 4	3833	4555	32000	36	16:35:14.0	01	12.0
471	BEACON	3c	158/ 2	3831	4555	32000	34	16:35:26.1	01	12.1
472	BEACON	3c	159/ 0	3831	4555	32000	28	16:35:38.1	01	12.0
473	BEACON	3C	159/ 5	3832	4555	32000	32	16:35:50.2	01	12.1
474	BEACON	3C	160/ 3	3833	4555	32000	38	16:36:02.2	01	12.0
475	BEACON	3C	161/ 1	3831	4555	32000	32	16:36:14.3	01	12.1
476	BEACON	3C	162/ 0	3831	4555	32000	34	16:36:26.3	01	12.0
477	BEACON	3C	162/ 6	3833	4555	32000	26	16:36:38.4	01	12.1

478	BEACON	3C	163/ 5	3837	4555	32000	26 16:36:50.5	01	12.1
479	BEACON	3C	164/ 3	3832	4555	32000	34 16:37:02.5	01	12.0
480	BEACON	3C	165/ 2	3833	4555	32000	30 16:37:14.5	01	12.0

CD RECORD 11/06/95 001 002 003 QJM 004 005 006 XYZ
 QJM MODE/S FLIGHT CHECK 11-06-95

SCAN	MSG	FLAGS	RNG	AZ	3/A	ALT	RL	TIME	PORT	DELTA
481	BEACON	3C	166/	1	3833	4555	32000	30	16:37:26.6	01 0.0
482	BEACON	3C	166/	7	3833	4555	32000	26	16:37:38.6	01 12.0
483	BEACON	3C	167/	6	3833	4555	32000	24	16:37:50.7	01 12.1
484	BEACON	3c	168/	5	3933	4555	32000	26	16:39:02.7	01 12.0
485	BEACON	3C	169/	4	3833	4555	32000	28	16:38:14.8	01 12.1
486	BEACON	3C	170/	3	3833	4555	32000	30	16:38:26.8	01 12.0
487	BEACON	3C	171/	2	3832	4555	32000	34	16:38:38.9	01 12.1
488	BEACON	3C	172/	1	3832	4555	32000	38	16:38:50.9	01 12.0
489	BEACON	3C*	173/	0	3832	4555	32000	40	16:39:03.0	01 12.1
490	BEACON	3C	173/	7	3833	4555	32000	42	16:39:15.0	01 12.0
491	BEACON	3C	174/	6	3832	4555	32000	44	16:39:27.1	01 12.1
492	BEACON	3C	175/	6	3832	4555	32000	46	16:39:39.2	01 12.1
493	BEACON	3C*	176/	5	3832	4555	32000	46	16:39:51.2	01 12.0
494	BEACON	3C	177/	4	3833	4555	32000	50	16:40:03.3	01 12.1
495	BEACON	3C	178/	3	3832	4555	32000	52	16:40:15.4	01 12.1
496	BEACON	3C	179/	2	3833	4555	32000	50	16:40:27.3	01 11.9
497	BEACON	3C*	180/	2	3833	4555	32000	50	16:40:39.4	01 12.1
498	BEACON	3C	181/	1	3832	4555	32000	46	16:40:51.4	01 12.0
499	BEACON	3C	182/	0	3833	4555	32000	46	16:41:03.5	01 12.1
500	BEACON	3C	182/	7	3832	4555	32000	42	16:41:15.6	01 12.1
501	BEACON	3C	183/	7	3831	4555	32000	42	16:41:27.6	01 12.0
502	BEACON	3C	184/	6	3833	4555	32000	46	16:41:39.6	01 12.0
503	BEACON	3C	185/	5	3832	4555	32000	46	16:41:51.7	01 12.1
504	BEACON	3C	186/	5	3833	4555	32000	42	16:42:03.7	01 12.0
505	BEACON	3C	187/	4	3832	4555	32000	36	16:42:15.8	01 12.1
506	BEACON	3C	188/	3	3832	4555	32000	32	16:42:27.8	01 12.0
507	BEACON	3C	189/	2	3832	4555	32000	32	16:42:39.9	01 12.0
508	BEACON	3C	190/	2	3832	4555	32000	30	16:42:51.9	01 12.1
509	BEACON	3C	191/	1	3834	4555	32000	28	16:43:03.9	01 12.0
510	BEACON	3C	192/	0	3833	4555	32000	32	16:43:16.0	01 12.1
511	BEACON	3C	192/	7	3833	4555	32000	28	16:43:28.0	01 12.0
512	BEACON	3C	193/	7	3833	4555	32000	22	16:43:40.1	01 12.1
513	BEACON	3C	194/	6	3836	4555	32000	20	16:43:52.1	01 12.0
539	BEACON	3C	183/	3	3824	4555	32000	26	16:49:05.3	01 313.2
540	BEACON	3C	182/	3	3823	4555	32000	32	16:49:17.4	01 12.1
541	BEACON	3C	181/	3	3823	4555	32000	34	16:49:29.4	01 12.0
542	BEACON	3C	180/	3	3825	4555	32000	28	16:49:41.4	01 12.0
543	BEACON	3C	179/	3	3823	4555	32000	28	16:49:53.5	01 12.1
544	BEACON	3C	178/	3	3824	4555	32000	30	16:50:05.6	01 12.1
545	BEACON	3C	177/	3	3824	4555	32000	32	16:50:17.6	01 12.0
546	BEACON	3C	176/	3	3824	4555	32000	36	16:50:29.7	01 12.1
547	BEACON	3C	175/	3	3825	4555	32000	32	16:50:41.8	01 12.1
548	BEACON	3C	174/	3	3824	4555	32000	28	16:50:53.7	01 11.9
549	BEACON	3C	173/	3	3822	4555	32000	24	16:51:05.8	01 12.1
550	BEACON	3C	172/	4	3826	4555	32000	18	16:51:17.8	01 12.0
562	BEACON	3C	160/	5	3824	4555	32000	22	16:53:42.4	01 144.6
563	BEACON	3C	159/	5	3823	4555	32000	26	16:53:54.4	01 12.0
564	BEACON	3C	158/	5	3825	4555	32000	26	16:54:06.5	01 12.1
565	BEACON	3C	157/	5	3824	4555	32000	20	16:54:18.5	01 12.0
566	BEACON	3C	156/	6	3926	4555	32000	24	16:54:30.5	01 12.0
567	BEACON	3C	155/	6	3823	4555	32000	20	16:54:42.6	01 12.1
568	BEACON	3C	154/	6	3823	4555	32000	26	16:54:54.7	01 12.1
569	BEACON	3C	153/	6	3826	4555	32000	30	16:55:06.7	01 12.0
570	BEACON	3C	152/	7	3822	4555	32000	24	16:55:18.7	01 12.0
571	BEACON	3C	151/	7	3824	4555	32000	30	16:55:30.8	01 12.1

572 BEACON	3C	150/ 7	3822	4555	32000	26 16:55:42.8	01	12.0
573 BEACON	3C	150/ 0	3831	4555	32000	14 16:55:54.9	01	12.1
578 BEACON	3C	145/ 1	3826	4555	32000	22 16:56:55.1	01	60.2

CD RECORD 11/06/95 001 002 003 QJM 004 005 006 XYZ
 QJM MODE/S FLIGHT CHECK 11-06-95

SCAN	MSG	FLAGS	RNG	AZ	3/A	ALT	RL	TIME	PORT	DELTA
579	BEACON	3C	144/ 1	3824	4555	32000	22	16:57:07.2	01	12.1
580	BEACON	3C	143/ 1	3825	4555	32000	28	16:57:19.2	01	12.0
581	BEACON	3C	142/ 2	3824	4555	32000	38	16:57:31.3	01	12.1
582	BEACON	3C	141/ 2	3824	4555	32000	40	16:57:43.4	01	12.1
583	BEACON	3C	140/ 2	3823	4555	32000	40	16:57:55.4	01	12.0
584	BEACON	3C	139/ 3	3824	4555	32000	38	16:58:07.4	01	12.0
585	BEACON	3C	138/ 3	3824	4555	32000	38	16:58:19.5	01	12.1
586	BEACON	3C	137/ 4	3824	4555	32000	32	16:58:31.5	01	12.0
587	BEACON	3C	136/ 4	3822	4555	32000	32	16:58:43.5	01	12.0
588	BEACON	3C	135/ 4	3824	4555	32000	36	16:58:55.6	01	12.1
589	BEACON	3C	134/ 5	3822	4555	32000	32	16:59:07.6	01	12.0
590	BEACON	3C	133/ 5	3824	4555	32000	34	16:59:19.7	01	12.1
591	BEACON	3C	132/ 5	3828	4555	32000	20	16:59:31.7	01	12.0
592	BEACON	3C	131/ 6	3823	4555	32000	20	16:59:43.7	01	12.0
593	BEACON	3C	130/ 6	3826	4555	32000	20	16:59:55.8	01	12.1
594	BEACON	3C	129/ 7	3827	4555	32000	18	17:00:07.8	01	12.0
597	BEACON	3C	127/ 1	3827	4555	32000	20	17:00:43.9	01	36.1
598	BEACON	3C	126/ 1	3824	4555	32000	26	17:00:55.9	01	12.0
599	BEACON	3C	125/ 2	3825	4555	32000	38	17:01:08.0	01	12.1
600	BEACON	3C	124/ 2	3825	4555	32000	42	17:01:20.0	01	12.0
601	BEACON	3C	123/ 3	3825	4555	32000	44	17:01:32.1	01	12.1
602	BEACON	3C	122/ 3	3824	4555	32000	40	17:01:44.1	01	12.0
603	BEACON	3C	121/ 4	3823	4555	32000	40	17:01:56.2	01	12.1
604	BEACON	3C	120/ 5	3824	4555	32000	42	17:02:08.2	01	12.0
605	BEACON	3C	119/ 5	3824	4555	32000	46	17:02:20.2	01	12.0
606	BEACON	3C	118/ 6	3824	4555	32000	42	17:02:32.3	01	12.1
607	BEACON	3C*	117/ 7	3824	4555	32000	42	17:02:44.3	01	22.0
608	BEACON	3C	116/ 7	3825	4555	32000	38	17:02:56.3	01	12.0
610	BEACON	C	115/ 1	3826	4555	32000	36	17:03:20.5	01	24.2
611	BEACON	3C	114/ 1	3824	4555	32000	42	17:03:32.5	01	12.0
612	BEACON	3C	113/ 2	3823	4555	32000	44	17:03:44.6	01	12.1
613	BEACON	3C*	112/ 3	3822	4555	32000	48	17:03:56.6	01	12.0
614	BEACON	3C	111/ 3	3824	4555	32000	48	17:04:08.6	01	12.0
615	BEACON	3C	110/ 4	3821	4555	32000	46	17:04:20.7	01	12.1
616	BEACON	3C	109/ 5	3820	4555	32000	46	17:04:32.7	01	12.0
617	BEACON	3C*	108/ 6	3821	4555	32000	40	17:04:44.8	01	12.1
618	BEACON	3C	107/ 7	3823	4555	32000	42	17:04:56.8	01	12.0
619	BEACON	3C	106/ 7	3823	4555	32000	40	17:05:08.8	01	12.0
620	BEACON	3C	106/ 0	3824	4555	32000	32	17:05:20.9	01	12.1
621	BEACON	3C	105/ 1	3825	4555	32000	32	17:05:33.0	01	12.1
622	BEACON	3C	104/ 2	3825	4555	32000	46	17:05:45.0	01	12.0
623	BEACON	3C	103/ 3	3823	4555	32000	46	17:05:57.1	01	12.1
624	BEACON	3C	102/ 4	3823	4555	32000	46	17:06:09.1	01	12.0
625	BEACON	3C	101/ 4	3823	4555	32000	46	17:06:21.1	01	12.0
626	BEACON	3C	100/ 5	3824	4555	32000	42	17:06:33.2	01	12.1
627	BEACON	3C	99/ 6	3822	4555	32000	42	17:06:45.2	01	12.0
628	BEACON	3C*	98/ 7	3824	4555	32000	42	17:06:57.3	01	12.1
629	BEACON	3C	98/ 0	3824	4555	32000	46	17:07:09.3	01	12.0
630	BEACON	3C*	97/ 1	3822	4555	32000	46	17:07:21.3	01	12.0
631	BEACON	3C	96/ 2	3821	4555	32000	46	17:07:33.4	01	12.1
632	BEACON	3C	95/ 4	3820	4555	32000	42	17:07:45.5	01	12.1
633	BEACON	3C	94/ 5	3823	4555	32000	32	17:07:57.5	01	12.0
634	BEACON	3C	93/ 7	3825	4555	32000	42	17:08:09.5	01	12.0
635	BEACON	3C	93/ 0	3823	4555	32000	28	17:08:21.5	01	12.0
636	BEACON	3C	92/ 2	3825	4555	32000	30	17:08:33.6	01	12.1

637	BEACON	3C	91/ 3	3825	4555	32000	48 17:08:45.7	01	12.1
638	BEACON	3C*	90/ 5	3824	4555	32000	46 17:08:57.7	01	12.0
639	BEACON	3C*	89/ 6	3823	4555	32000	48 17:09:09.8	01	12.1

CD RECORD 11/06/95 001 002 003 QJM 004 005 006 XYZ
QJM MODE/S FLIGHT CHECK 11-06-95

SCAN	MSG	FLAGS	RNG	AZ	3/A	ALT	RL	TIME	PORT	DELTA
640	BEACON	3C	89/ 0	3823	4555	32000	50	17:09:21.8	01	12.0
641	BEACON	3C	88/ 2	3824	4555	32000	48	17:09:33.8	01	12.0
642	BEACON	3C	87/ 4	3824	4555	32000	50	17:09:45.9	01	12.1
643	BEACON	3C	86/ 5	3822	4555	32000	52	17:09:58.0	01	12.1
644	BEACON	3C	85/ 7	3822	4555	32000	48	17:10:10.0	01	12.0
645	BEACON	3C	85/ 1	3822	4555	32000	44	17:10:22.0	01	12.0
646	BEACON	3C	84/ 2	3821	4555	32000	42	17:10:34.0	01	12.0
647	BEACON	3C	83/ 4	3821	4555	32000	46	17:10:46.1	01	12.1
648	BEACON	3C	82/ 6	3822	4555	32000	40	17:10:58.2	01	12.1
649	BEACON	3C	82/ 0	3815	4555	32000	46	17:11:10.2	01	12.0
650	BEACON	3C	81/ 2	3822	4555	32000	46	17:11:22.2	01	12.0
651	BEACON	3C	80/ 4	3823	4555	32000	48	17:11:34.3	01	12.1
652	BEACON	3C	79/ 5	3824	4555	32000	48	17:11:46.3	01	12.0
653	BEACON	3C	78/ 7	3823	4555	32000	50	17:11:58.4	01	12.1
654	BEACON	3C	77/ 1	3821	4555	32000	52	17:12:10.5	01	12.1
655	BEACON	3C	77/ 3	3822	4555	32000	50	17:12:22.5	01	12.0
656	BEACON	3C	76/ 5	3822	4555	32000	50	17:12:34.5	01	12.0
657	BEACON	3C*	75/ 6	3822	4555	32000	48	17:12:46.5	01	12.0
658	BEACON	3C	75/ 0	3821	4555	32000	50	17:12:58.6	01	12.1
659	BEACON	3C	74/ 2	3821	4555	32000	50	17:13:10.7	01	12.1
660	BEACON	3C	73/ 3	3822	4555	32000	54	17:13:22.7	01	12.0
661	BEACON	3C	72/ 5	3822	4555	32000	52	17:13:34.7	01	12.0
662	BEACON	3C	71/ 7	3824	4555	32000	48	17:13:46.8	01	12.1
663	BEACON	3C	71/ 1	3823	4555	32000	52	17:13:58.8	01	12.0
664	BEACON	3C	70/ 2	3822	4555	32000	54	17:14:10.9	01	12.1
665	BEACON	3C*	69/ 4	3821	4555	32000	52	17:14:22.9	01	12.0
666	BEACON	3C	68/ 6	3823	4555	32000	52	17:14:35.0	01	12.1
667	BEACON	3C	68/ 0	3822	4555	32000	52	17:14:47.0	01	12.0
668	BEACON	3C	67/ 1	3821	4555	32000	48	17:14:59.0	01	12.0
669	BEACON	3C	66/ 3	3822	4555	32000	52	17:15:11.1	01	12.1
670	BEACON	3C	65/ 5	3822	4555	32000	54	17:15:23.2	01	12.1
671	BEACON	3C	64/ 7	3821	4555	32000	50	17:15:35.2	01	12.0
672	BEACON	3C	64/ 0	3824	4555	32000	52	17:15:47.2	01	12.0
673	BEACON	3C	63/ 2	3822	4555	32000	50	17:15:59.3	01	12.1
674	BEACON	3C	62/ 4	3823	4555	32000	52	17:16:11.3	01	12.0
675	BEACON	3C	61/ 5	3822	4555	32000	50	17:16:23.4	01	12.1
676	BEACON	3C	60/ 7	3823	4505	32000	48	17:16:35.4	01	12.0
677	BEACON	3C	60/ 1	3823	4555	32000	48	17:16:47.5	01	12.1
678	BEACON	3C	59/ 2	3821	4555	32000	50	17:16:59.6	01	12.1
679	BEACON	3C	58/ 4	3822	4555	32000	50	17:17:11.5	01	11.9
680	BEACON	3C	57/ 6	3822	4555	32000	50	17:17:23.6	01	12.1
681	BEACON	3C	57/ 0	3821	4555	32000	46	17:17:35.7	01	12.1
682	BEACON	3C	56/ 1	3823	4555	32000	54	17:17:47.7	01	12.0
683	BEACON	3C*	55/ 3	3822	4555	32000	50	17:17:59.7	01	12.0
684	BEACON	3C	54/ 5	3822	4555	32000	52	17:18:11.8	01	12.1
685	BEACON	3C	53/ 6	3824	4555	32000	52	17:18:23.8	01	12.0
686	BEACON	3C	53/ 0	3823	4555	32000	50	17:18:35.9	01	12.1
687	BEACON	3C	52/ 2	3824	4555	32000	50	17:18:47.9	01	12.0
688	BEACON	3C	51/ 4	3823	4555	32000	52	17:19:00.0	01	12.1
689	BEACON	3C	50/ 5	3822	4555	32000	48	17:19:12.0	01	12.0
690	BEACON	3C	49/ 7	3823	4555	32000	50	17:19:24.1	01	12.1
691	BEACON	3C	49/ 1	3823	4555	32000	48	17:19:36.1	01	12.0
692	BEACON	3C	48/ 3	3823	4555	32000	50	17:19:48.2	01	12.1
693	BEACON	3C	47/ 5	3823	4555	32000	52	17:20:00.2	01	12.0
694	BEACON	3C	46/ 7	3824	4555	32000	50	17:20:12.3	01	12.1

695 BEACON	3C	46/ 1	3823	4555	32000	50 17:20:24.3	01	12.0
696 BEACON	3C	45/ 2	3823	4555	32000	50 17:20:36.3	01	12.0
697 BEACON	3C	44/ 4	3823	4555	32000	54 17:20:48.4	01	12.1

CD RECORD 11/06/95 001 002 003 QJM 004 005 006 XYZ
 QJM MODE/S FLIGHT CHECK 11-06-95

SCAN	MSG	FLAGS	RNG	AZ	3/A	ALT	RL	TIME	PORT	DELTA
698	BEACON	3C	43/ 6	3824	4555	32000	52	17:21:00.4	01	12.0
699	BEACON	3C	43/ 0	3823	4555	32000	52	17:21:12.5	01	12.1
700	BEACON	3C	42/ 2	3823	4555	32000	48	17:21:24.5	01	12.0
701	BEACON	3C	41/ 4	3824	4555	32000	48	17:21:36.5	01	12.0
702	BEACON	3C*	40/ 6	3823	4555	32000	50	17:21:48.6	01	12.1
703	BEACON	3C	40/ 0	3821	4555	32000	50	17:22:00.6	01	12.0
704	BEACON	3C	39/ 2	3821	4555	32000	48	17:22:12.7	01	12.1
705	BEACON	3C	38/ 4	3823	4555	32000	54	17:22:24.7	01	12.0
706	BEACON	3C	37/ 6	3824	4555	32000	50	17:22:36.8	01	12.1
707	BEACON	3C	37/ 0	3823	4555	32000	52	17:22:48.8	01	12.0
708	BEACON	3C	36/ 2	3823	4555	32000	50	17:23:00.9	01	12.1
709	BEACON	3C	35/ 4	3822	4555	32000	50	17:23:12.9	01	12.0
710	BEACON	3C	34/ 6	3824	4555	32000	52	17:23:25.0	01	12.1
711	BEACON	3C	34/ 0	3824	4555	32000	54	17:23:37.0	01	12.0
712	BEACON	3C	33/ 2	3822	4555	32000	46	17:23:49.0	01	12.0
713	BEACON	3C	32/ 3	3822	4555	32000	54	17:24:01.1	01	12.1
714	BEACON	3C	31/ 5	3823	4555	32000	52	17:24:13.1	01	12.0
715	BEACON	3C	30/ 7	3825	4555	32000	54	17:24:25.2	01	12.1
716	BEACON	3C	30/ 1	3824	4555	32000	50	17:24:37.2	01	12.0
717	BEACON	3C	29/ 3	3823	4555	32000	50	17:24:49.2	01	12.0
718	BEACON	3C	28/ 5	3824	4555	32000	50	17:25:01.3	01	12.1
719	BEACON	3C	28/ 0	3824	4555	32000	44	17:25:13.4	01	12.1
720	BEACON	3C	27/ 2	3824	4555	32000	50	17:25:25.4	01	12.0
721	BEACON	3C	26/ 4	3823	4555	32000	48	17:25:37.4	01	12.0
722	BEACON	3C	25/ 7	3824	4555	32000	52	17:25:49.5	01	12.1
723	BEACON	3C	25/ 1	3824	4555	32000	48	17:26:01.5	01	12.0
724	BEACON	3C	24/ 3	3823	4555	32000	52	17:26:13.6	01	12.1
725	BEACON	3C	23/ 6	3823	4555	32000	52	17:26:25.6	01	12.0
726	BEACON	3C	23/ 0	3822	4555	32000	46	17:26:37.7	01	12.1
727	BEACON	3C	22/ 3	3823	4555	32000	50	17:26:49.8	01	12.1
728	BEACON	3C	21/ 5	3822	4555	32000	44	17:27:01.7	01	11.9
729	BEACON	3C	21/ 0	3822	4555	32000	46	17:27:13.8	01	12.1
730	BEACON	3C	20/ 2	3821	4555	32000	52	17:27:25.9	01	12.1
731	BEACON	3C	19/ 5	3822	4555	32000	48	17:27:37.9	01	12.0
732	BEACON	3C	18/ 7	3821	4555	32000	48	17:27:49.9	01	12.0
733	BEACON	3C	18/ 2	3820	4555	32000	48	17:28:02.0	01	12.1
734	BEACON	3C	17/ 4	3821	4555	32000	46	17:28:14.0	01	12.0
735	BEACON	3C	16/ 7	3820	4555	32000	46	17:28:26.1	01	12.1
736	BEACON	3C	16/ 1	3819	4555	32000	42	17:28:38.1	01	12.0
737	BEACON	3C	15/ 4	3821	4555	32000	48	17:28:50.2	01	12.1
738	BEACON	3C	14/ 6	3820	4555	32000	48	17:29:02.2	01	12.0
739	BEACON	3C	14/ 1	3820	4555	32000	50	17:29:14.2	01	12.0
740	BEACON	3C	13/ 4	3819	4555	32000	50	17:29:26.3	01	12.1
741	BEACON	3C	12/ 6	3820	4555	32000	54	17:29:38.4	01	12.1
742	BEACON	3C*	12/ 1	3819	4555	32000	52	17:29:50.4	01	12.0
743	BEACON	3C	11/ 4	3819	4555	32000	52	17:30:02.4	01	12.0
744	BEACON	3C	10/ 7	3819	4555	32000	52	17:30:14.4	01	12.0
745	BEACON	3C	10/ 2	3819	4555	32000	50	17:30:26.5	01	12.1
746	BEACON	3C	9/ 5	3818	4555	32000	50	17:30:38.6	01	12.1
747	BEACON	3C	9/ 0	3817	4555	32000	46	17:30:50.6	01	12.0
748	BEACON	3C	B/ 4	3815	4555	32000	54	17:31:02.7	01	12.1
749	BEACON	3C	7/ 7	3816	4555	32000	54	17:31:14.7	01	12.0
750	BEACON	3C	7/ 3	3816	4555	32000	54	17:31:26.7	01	12.0
751	BEACON	3	6/ 7	3820	4555	61500	10	17:31:38.8	01	12.1
768	BEACON	3C	5/ 3	3581	4555	25800	32	17:35:02.8	01	204.0

769 BEACON	3C	5/ 7	3605	4555	25000	62 17:35:15.0	01	12.2
770 BEACON	3C	6/ 3	3622	4555	24300	58 17:35:27.1	01	12.1
771 BEACON	3C	7/ 0	3632	4555	23400	56 17:35:39.1	01	12.0

CD RECORD 11/06/95 001 002 003 QJM 004 005 006 XYZ
QJM MODE/S FLIGHT CHECK 11-06-95

SCAN	MSG	FLAGS	RNG	AZ	3/A	ALT	RL	TIME	PORT	DELTA
772	BEACON	3C	7/ 5	3659	4555	22600	54	17:35:51.2	01	12.1
773	BEACON	3C	B/ 2	3701	4555	21600	56	17:36:03.4	01	12.2
774	BEACON	3C	8/ 6	3762	4555	20900	52	17:36:15.6	01	12.2
775	BEACON	3C	9/ 1	3833	4555	20200	50	17:36:27.9	01	12.3
776	BEACON	3C	9/ 2	3909	4555	19500	46	17:36:40.1	01	12.2
777	BEACON	3C	9/ 2	3988	4555	18800	52	17:36:52.4	01	12.3
778	BEACON	3C	8/ 7	4060	4555	18100	46	17:37:04.6	01	12.2
780	BEACON	3C	8/ 4	28	4555	17400	42	17:37:16.9	01	12.3
781	BEACON	3C	7/ 6	78	4555	16700	42	17:37:29.1	01	12.2
782	BEACON	3C	7/ 0	107	4555	16000	48	17:37:41.2	01	12.1
783	BEACON	3C	6/ 3	122	4555	15300	52	17:37:53.3	01	12.1
784	BEACON	3C	5/ 5	123	4555	14600	46	17:38:05.3	01	12.0
785	BEACON	3C	5/ 0	89	4555	13900	52	17:38:17.3	01	12.0
786	BEACON	3C	4/ 3	52	4555	13000	46	17:38:29.2	01	11.9
787	BEACON	3C	3/ 6	40	4555	12200	46	17:38:41.2	01	12.0
788	BEACON	3C	3/ 0	38	4555	11300	54	17:38:53.2	01	12.0
788	BEACON	3C	2/ 2	4084	4555	10400	58	17:39:05.1	01	11.9
789	BEACON	3C	1/ 7	3883	4555	9800	50	17:39:16.6	01	11.5
790	BEACON	3C	1/ 6	3610	4555	9100	48	17:39:27.8	01	11.2
794	BEACON	3C	3/ 3	3537	4555	6500	54	17:40:15.8	01	48.0
795	BEACON	3C	3/ 4	3645	4555	6100	52	17:40:28.2	01	12.4
796	BEACON	3C	3/ 2	3755	4555	5600	52	17:40:40.5	01	12.3
797	BEACON	3C	2/ 6	3833	4555	5300	50	17:40:52.8	01	12.3
798	BEACON	3C	2/ 2	3851	4555	5200	52	17:41:04.8	01	12.0
799	BEACON	3C	1/ 5	3870	4555	5300	48	17:41:17.0	01	12.2
800	BEACON	3C	1/ 0	3928	4555	5400	56	17:41:29.2	01	12.2
802	BEACON	3C	0/ 5	1620	4555	5300	28	17:41:46.5	01	17.3
803	BEACON	3C	1/ 2	1918	4555	5400	58	17:41:59.4	01	12.9
805	BEACON	3C	2/ 4	2263	4555	5400	52	17:42:24.6	01	25.2
806	BEACON	3C	2/ 7	2424	4555	5400	54	17:42:37.0	01	12.4
807	BEACON	3C	3/ 1	2585	4555	5400	52	17:42:49.6	01	12.6
808	BEACON	3C	3/ 1	2732	4555	5400	56	17:43:02.0	01	12.4
809	BEACON	3C	3/ 1	2871	4555	5400	52	17:43:14.5	01	12.5
810	BEACON	3C	2/ 7	3007	4555	5400	56	17:43:26.9	01	12.4
811	BEACON	3C	2/ 4	3129	4555	5400	50	17:43:39.3	01	12.4
812	BEACON	3C	1/ 7	3242	4555	5400	46	17:43:51.7	01	12.4
813	BEACON	3C	1/ 2	3361	4555	5400	52	17:44:04.1	01	12.4
814	BEACON	3C	0/ 6	3742	4555	5400	66	17:44:17.2	01	13.1
816	BEACON	3C	0/ 6	1207	4555	5400	74	17:44:33.9	01	16.7
817	BEACON	3C	1/ 3	1530	4555	5400	54	17:44:46.9	01	13.0
818	BEACON	3C	1/ 7	1745	4555	5400	48	17:44:59.5	01	12.6
819	BEACON	3C	2/ 3	1936	4555	5400	52	17:45:12.1	01	12.6
820	BEACON	3C	2/ 4	2142	4555	5400	16	17:45:24.7	01	12.6
821	BEACON	3C	2/ 5	2299	4555	5400	52	17:45:37.4	01	12.7
822	BEACON	3C	2/ 4	2495	4555	5400	52	17:45:49.9	01	12.5
823	BEACON	3C	2/ 2	2710	4555	5400	50	17:46:02.6	01	12.7
824	BEACON	3C	1/ 7	2959	4555	5400	54	17:46:15.3	01	12.7
825	BEACON	3C	1/ 4	3284	4555	5400	54	17:46:28.3	01	13.0
826	BEACON	3C	1/ 2	3771	4555	5400	50	17:46:41.8	01	13.5
828	BEACON	3C	1/ 2	272	4555	5400	48	17:46:55.6	01	13.8
829	BEACON	3C	1/ 6	706	4555	5400	52	17:47:08.9	01	13.3
830	BEACON	3C	2/ 2	965	4555	5400	54	17:47:21.7	01	12.8
831	BEACON	3C	3/ 1	1096	4555	5400	54	17:47:34.1	01	12.4
832	BEACON	3C	3/ 7	1164	4555	5400	54	17:47:46.4	01	12.3
833	BEACON	3C	4/ 6	1219	4555	5400	48	17:47:58.5	01	12.1

834 BEACON	3C	5/ 4	1270	4555	5400	54	17:48:10.7	01	12.2
835 BEACON	3C	6/ 2	1308	4555	5400	52	17:48:23.0	01	12.3
836 BEACON	3C	7/ 1	1338	4555	5400	54	17:48:35.1	01	12.1

CD RECORD 11/06/95 001 002 003 QJM 004 005 006 XYZ
QJM MODE/S FLIGHT CHECK 11-06-95

SCAN	MSG	FLAGS	RNG	AZ	3/A	ALT	RL	TIME	PORT	DELTA
837	BEACON	3C	7/ 7	1356	4555	5400	52	17:48:47.2	01	12.1
838	BEACON	3C	8/ 6	1361	4555	5400	52	17:48:59.2	01	12.0
839	BEACON	3C	9/ 5	1361	4555	5400	52	17:49:11.2	01	12.0
840	BEACON	3C	10/ 3	1358	4555	5400	52	17:49:23.3	01	12.1
841	BEACON	3C	11/ 2	1361	4555	5300	52	17:49:35.3	01	12.0
842	BEACON	3C	12/ 1	1363	4555	5400	52	17:49:47.4	01	12.1
843	BEACON	3C	12/ 7	1364	4555	5400	52	17:49:59.4	01	12.0
844	BEACON	3C	13/ 6	1365	4555	5400	54	17:50:11.4	01	12.0
845	BEACON	3C	14/ 4	1367	4555	5400	52	17:50:23.5	01	12.1
846	BEACON	3C	15/ 3	1369	4555	5300	50	17:50:35.6	01	12.1
847	BEACON	3C	16/ 1	1369	4555	5100	50	17:50:47.6	01	12.0
848	BEACON	3C	16/ 7	1367	4555	4700	46	17:50:59.6	01	12.0
849	BEACON	3C	17/ 6	1365	4555	4200	46	17:51:11.6	01	12.0
850	BEACON	3C	18/ 4	1366	4555	3900	50	17:51:23.7	01	12.1
851	BEACON	3C	19/ 2	1364	4555	3700	52	17:51:35.7	01	12.0
852	BEACON	3C	19/ 7	1366	4555	3600	52	17:51:47.8	01	12.1
853	BEACON	3C	20/ 4	1364	4555	3600	50	17:51:59.8	01	12.0
854	BEACON	3C	21/ 1	1360	4555	3600	52	17:52:11.9	01	12.1
855	BEACON	3C	21/ 6	1358	4555	3500	50	17:52:23.9	01	12.0
856	BEACON	3C	22/ 3	1357	4555	3500	52	17:52:35.9	01	12.0
857	BEACON	3C	22/ 7	1356	4555	3400	36	17:52:47.9	01	12.0
858	BEACON	3C	23/ 3	1359	4555	3400	30	17:52:59.9	01	12.0
859	BEACON	3C	23/ 6	1371	4555	3400	30	17:53:12.0	01	12.1
865	BEACON	3C	25/ 3	1351	4555	2600	50	17:54:24.2	01	72.2
866	BEACON	3C	25/ 2	1340	4555	2300	50	17:54:36.2	01	12.0
867	BEACON	3C	251 1	1332	4555	2200	38	17:54:48.2	01	12.0
868	BEACON	3C	25/ 0	1323	4555	2100	34	17:55:00.3	01	12.1

PLOTCD

VERSION 69
(C)1995 PDS

FILENAME: QJM1106C.MX6

SCANS: 193 THROUGH 515

Mode 3/A Code 4555

RdrBcn ☐ Disabled

Radar ☐ Disabled

Beacon ☐ Enabled

UX ☒ Disabled

Altitude = -1000 to 100000 ft.

RdrBcn count = 0

Beacon count = 307

Radar count = 0

UX count = 0

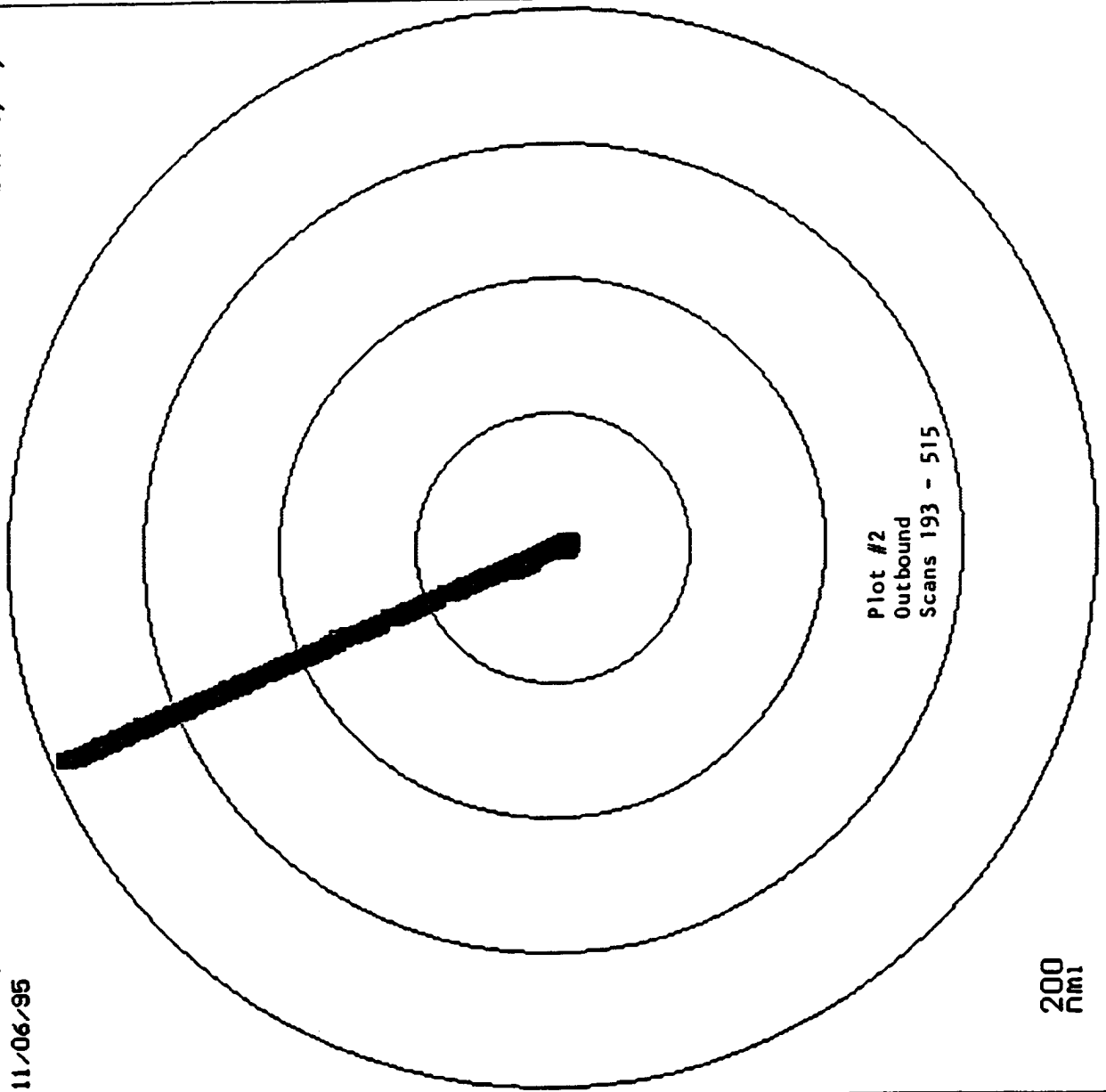
Radar = 0.0 %

Reinforced

[F1] FILE [Alt-F1] HELP
[F2] ZOOM [Alt-F2] NOTE
[F3] TARGET [Alt-F3] ID
[F4] SCANS [Alt-F4] SETUP
[F5] RANGE [Alt-F5] STATS
[F9] PRINT +/- STEP
[F10] QUIT

RECORDED:
11/06/95

QJM 01, 02, 03



QJM 01, 02, 03

RECORDED:
11/06/95

PLOTCD VERSION 69
 (C)1995 PDS

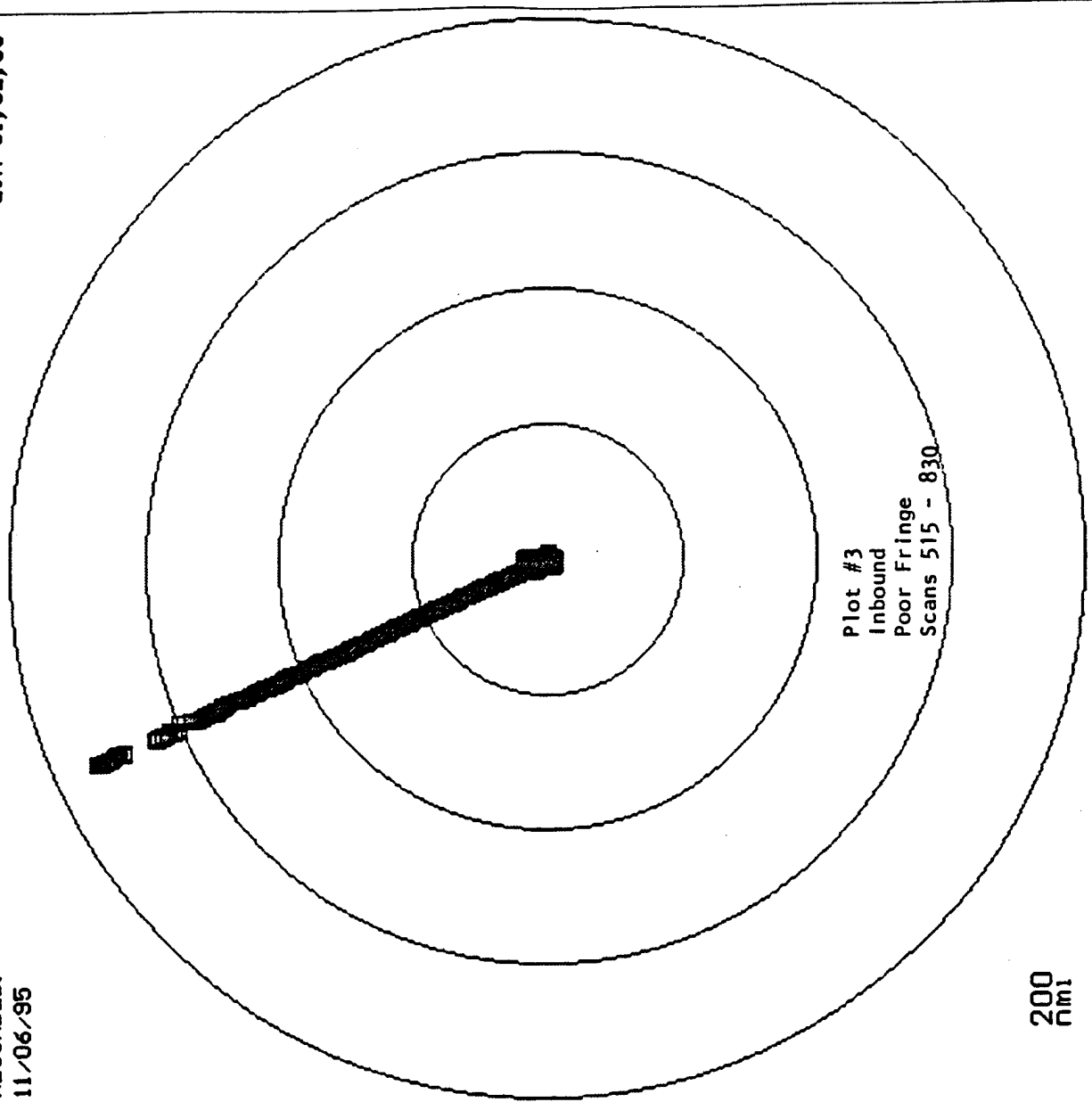
FILENAME: QJM1106C.MX6
SCANS: 515 THROUGH 830
Mode 3/A Code 4555
RdrBcn Disabled
Radar Disabled
Beacon Enabled
WX Disabled

Altitude = -1000 to 100000 ft.

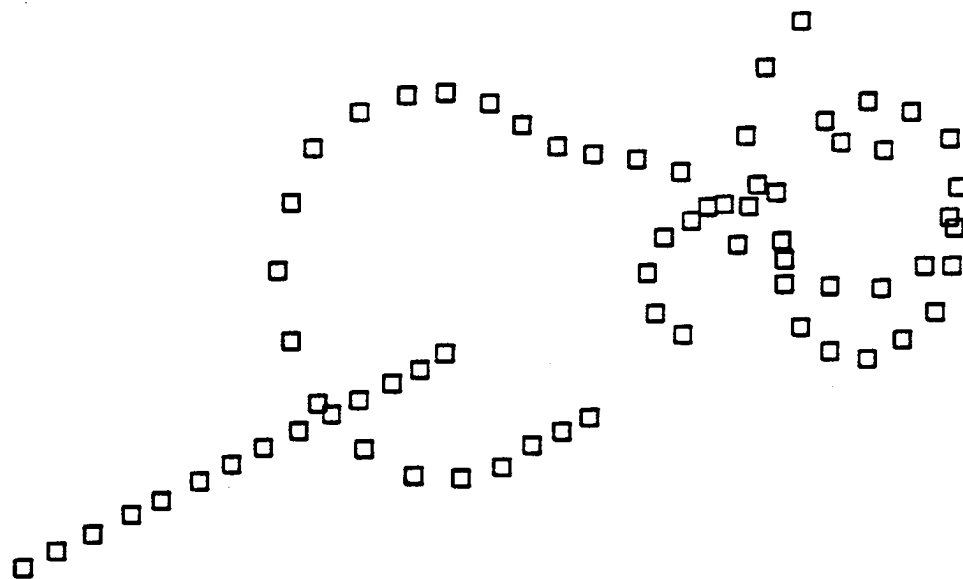
RdrBcn count = 0
Beacon count = 251
Radar count = 0
WX count = 0

Radar = 0.0 %
Reinforced

F1 FILE **Alt-F1** HELP
F2 ZOOM **Alt-F2** NOTE
F3 TARGET **Alt-F3** ID
F4 SCANS **Alt-F4** SETUP
F5 RANGE **Alt-F5** STATS
F9 PRINT +/- STEP
F10 QUIT



QJM 01,02,03



Plot #4 Inner Fringe Scans 738 - 830

QJM1106C.MX6 Scans: 515 to 830 F2-ZOOM F6-DATA F7-PR DATA F9-PR SCRN <Esc>-ZOOM OUT

CD RECORD 11/06/95 001 002 003 QJM 004 005 006 XYZ
QJM MODE/S FLIGHT CHECK 11-06-95

SCAN	MSG	FLAGS	RNG	AZ	3/A	ALT	RL	TIME	PORT	DELTA
738	BEACON	3C	14/ 6	3820	4555	32000	48	17:29:02.2	01	0.0
739	BEACON	3C	14/ 1	3820	4555	32000	50	17:29:14.2	01	12.0
740	BEACON	3C	13/ 4	3819	4555	32000	50	17:29:26.3	01	12.1
741	BEACON	3C	12/ 6	3820	4555	32000	54	17:29:38.4	01	12.1
742	BEACON	3C*	12/ 1	3819	4555	32000	52	17:29:50.4	01	12.0
743	BEACON	3C	11/ 4	3819	4555	32000	52	17:30:02.4	01	12.0
744	BEACON	3C	10/ 7	3819	4555	32000	52	17:30:14.4	01	12.0
745	BEACON	3C	10/ 2	3819	4555	32000	50	17:30:26.5	01	12.1
746	BEACON	3C	9/ 5	3818	4555	32000	50	17:30:38.6	01	12.1
747	BEACON	3C	9/ 0	3817	4555	32000	46	17:30:50.6	01	12.0
748	BEACON	3C	8/ 4	3815	4555	32000	54	17:31:02.7	01	12.1
749	BEACON	3C	7/ 7	3816	4555	32000	54	17:31:14.7	01	12.0
750	BEACON	3C	7/ 3	3816	4555	32000	54	17:31:26.7	01	12.0
751	BEACON	3	6/ 7	3820	4555	61500	10	17:31:38.8	01	12.1
768	BEACON	3C	5/ 3	3581	4555	25800	32	17:35:02.8	01	204.0
769	BEACON	3C	5/ 7	3605	4555	25000	62	17:35:15.0	01	12.2
770	BEACON	3C	6/ 3	3622	4555	24300	58	17:35:27.1	01	12.1
771	BEACON	3C	7/ 0	3632	4555	23400	56	17:35:39.1	01	12.0
772	BEACON	3C	7/ 5	3659	4555	22600	54	17:35:51.2	01	12.1
773	BEACON	3C	8/ 2	3701	4555	21600	56	17:36:03.4	01	12.2
774	BEACON	3C	8/ 6	3762	4555	20900	52	17:36:15.6	01	12.2
775	BEACON	3C	9/ 1	3833	4555	20200	50	17:36:27.9	01	12.3
776	BEACON	3C	9/ 2	3909	4555	19500	46	17:36:40.1	01	12.2
777	BEACON	3C	9/ 2	3988	4555	18800	52	17:36:52.4	01	12.3
778	BEACON	3C	8/ 7	4060	4555	18100	46	17:37:04.6	01	12.2
780	BEACON	3C	8/ 4	28	4555	17400	42	17:37:16.9	01	12.3
781	BEACON	3C	7/ 6	78	4555	16700	42	17:37:29.1	01	12.2
782	BEACON	3C	7/ 0	107	4555	16000	48	17:37:41.2	01	12.1
783	BEACON	3C	6/ 3	122	4555	15300	52	17:37:53.3	01	12.1
784	BEACON	3C	5/ 5	123	4555	14600	46	17:38:05.3	01	12.0
785	BEACON	3C	5/ 0	89	4555	13900	52	17:38:17.3	01	12.0
786	BEACON	3C	4/ 3	52	4555	13000	46	17:38:29.2	01	11.9
787	BEACON	3C	3/ 6	40	4555	12200	46	17:38:41.2	01	12.0
788	BEACON	3C	3/ 0	38	4555	11300	54	17:38:53.2	01	12.0
788	BEACON	3C	2/ 2	4084	4555	10400	58	17:39:05.1	01	11.9
789	BEACON	3C	1/ 7	3883	4555	9800	50	17:39:16.6	01	11.5
790	BEACON	3C	1/ 6	3610	4555	9100	48	17:39:27.8	01	11.2
794	BEACON	3C	3/ 3	3537	4555	6500	54	17:40:15.8	01	48.0
795	BEACON	3C	3/ 4	3645	4555	6100	52	17:40:28.2	01	12.4
796	BEACON	3C	3/ 2	3755	4555	5600	52	17:40:40.5	01	12.3
797	BEACON	3C	2/ 6	3833	4555	5300	50	17:40:52.8	01	12.3
798	BEACON	3C	2/ 2	3851	4555	5200	52	17:41:04.8	01	12.0
799	BEACON	3C	1/ 5	3870	4555	5300	48	17:41:17.0	01	12.2
800	BEACON	3C	1/ 0	3928	4555	5400	56	17:41:29.2	01	12.2
802	BEACON	3C	0/ 5	1620	4555	5300	28	17:41:46.5	01	17.3
803	BEACON	3C	1/ 2	1918	4555	5400	58	17:41:59.4	01	12.9
805	BEACON	3C	2/ 4	2263	4555	5400	52	17:42:24.6	01	25.2
806	BEACON	3C	2/ 7	2424	4555	5400	54	17:42:37.0	01	12.4
807	BEACON	3C	3/ 1	2585	4555	5400	52	17:42:49.6	01	12.6
808	BEACON	3C	3/ 1	2732	4555	5400	56	17:43:02.0	01	12.4
809	BEACON	3C	3/ 1	2871	4555	5400	52	17:43:14.5	01	12.5
810	BEACON	3C	2/ 7	3007	4555	5400	56	17:43:26.9	01	12.4
811	BEACON	3C	2/ 4	3129	4555	5400	50	17:43:39.3	01	12.4
812	BEACON	3C	1/ 7	3242	4555	5400	46	17:43:51.7	01	12.4
813	BEACON	3C	1/ 2	3361	4555	5400	52	17:44:04.1	01	12.4

814 BEACON	3C	O/ 6	3742	4555	5400	66 17:44:17.2	01	13.1
816 BEACON	3C	O/ 6	1207	4555	5400	74 17:44:33.9	01	16.7
817 BEACON	3C	1/ 3	1530	4555	5400	54 17:44:46.9	01	13.0

CD RECORD 11/06/95 001 002 003 QJM 004 005 006 XYZ
 QJM MODE/S FLIGHT CHECK 11-06-95

SCAN	MSG	FLAGS	RNG	AZ	3/A	ALT	RL	TIME	PORT	DELTA
818	BEACON	3C	1/ 7	1745	4555	5400	48	17:44:59.5	01	12.6
819	BEACON	3C	2/ 3	1936	4555	5400	52	17:45:12.1	01	12.6
820	BEACON	3C	2/ 4	2142	4555	5400	16	17:45:24.7	01	12.6
821	BEACON	3C	2/ 5	2299	4555	5400	52	17:45:37.4	01	12.7
822	BEACON	3C	2/ 4	2495	4555	5400	52	17:45:49.9	01	12.5
823	BEACON	3C	2/ 2	2710	4555	5400	50	17:46:02.6	01	12.7
824	BEACON	3C	1/ 7	2959	4555	5400	54	17:46:15.3	01	12.7
825	BEACON	3C	1/ 4	3284	4555	5400	54	17:46:28.3	01	13.0
826	BEACON	3C	1/ 2	3771	4555	5400	50	17:46:41.8	01	13.5
828	BEACON	3C	1/ 2	272	4555	5400	48	17:46:55.6	01	13.8
829	BEACON	3C	1/ 6	706	4555	5400	52	17:47:08.9	01	13.3
830	BEACON	3C	2/ 2	965	4555	5400	54	17:47:21.7	01	12.8

PLOTCD VERSION 69
 (C)1995 PDS

FILENAME: QJM1106C.MX6

SCANS: 800 THROUGH 909

Mode 3/A Code 4555

RdrBcn ☐ Disabled

Radar ☐ Disabled

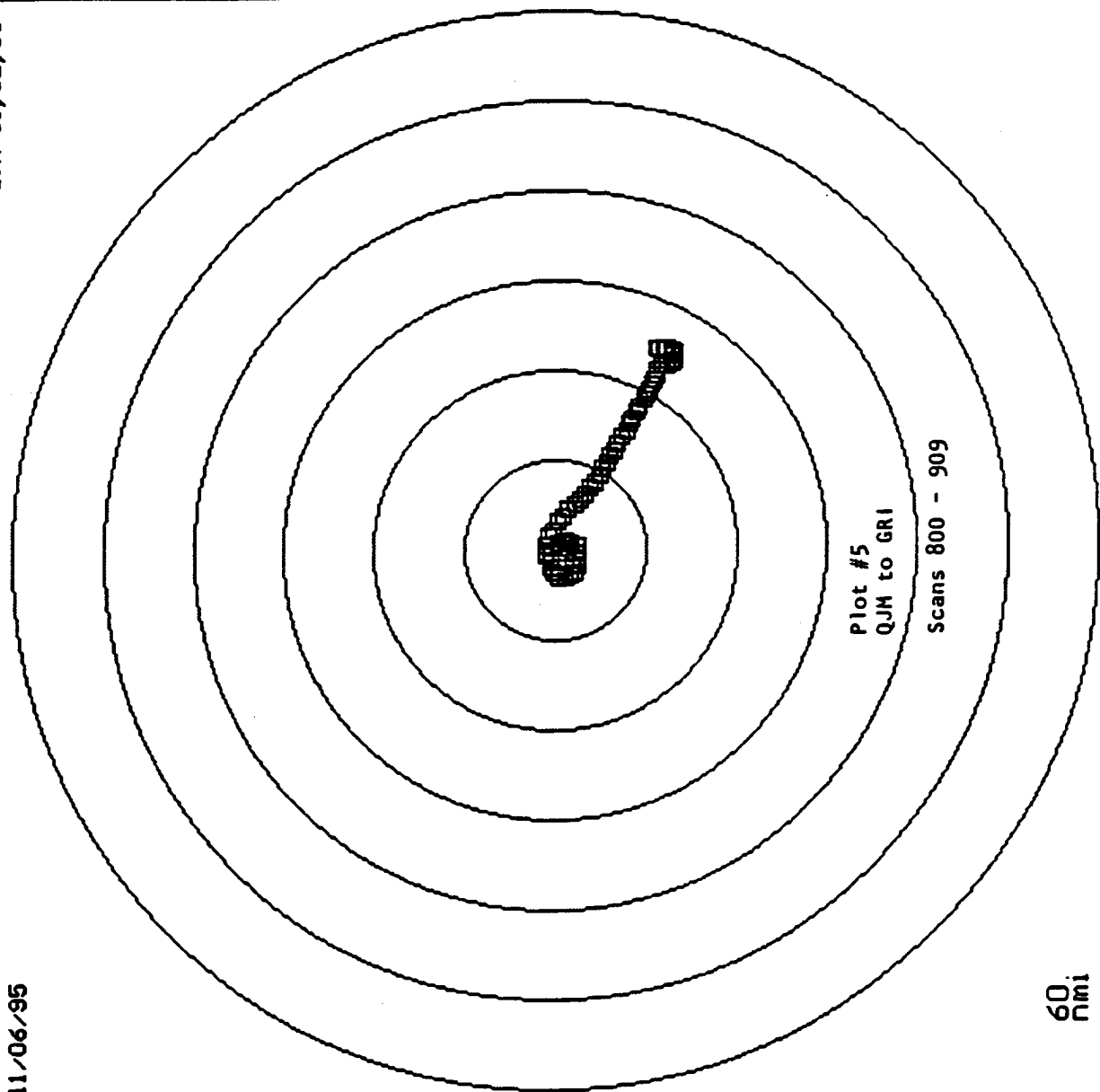
Beacon ☐ Enabled

WX ☒ Disabled

Altitude = -1000 to 100000 ft.

RECORDED:
 11/06/95

QJM 01,02,03



RdrBcn count = 0

Beacon count = 65

Radar count = 0

WX count = 0

Radar = 0.0 %

Reinforced

F1 FILE **Alt-F1** HELP

F2 ZOOM **Alt-F2** NOTE

F3 TARGET **Alt-F3** ID

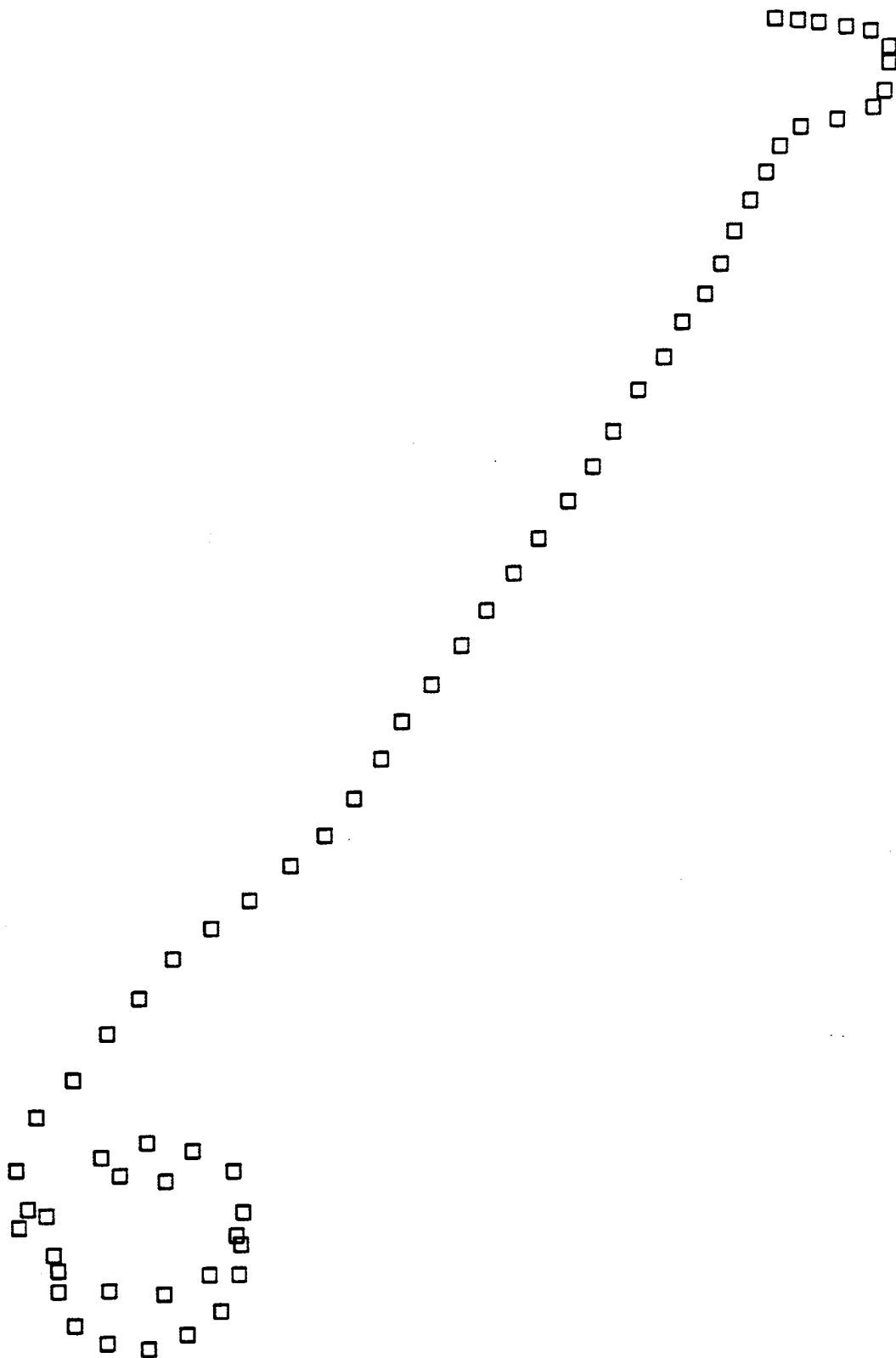
F4 SCANS **Alt-F4** SETUP

F5 RANGE **Alt-F5** STATS

F9 PRINT **+/-** STEP

F10 QUIT

QJM 01, 02, 03



Plot #6 QJM - to - GRI Zoom Scans 800 - 909

QJM106C.MX6 Scans: 800 to 909

F2-ZOOM

F6-DATA

F7-PR DATA

F9-PR SCRN

<Esc>-ZOOM OUT

CD RECORD 11/06/95 001 002 003 QJM 004 005 006 XYZ
QJM MODE/S FLIGHT CHECK 11-06-95

SCAN	MSG	FLAGS	RNG	AZ	3/A	ALT	RL	TIME	PORT	DELTA
800	BEACON	3C	1/ 0	3928	4555	5400	56	17:41:29.2	01	0.0
802	BEACON	3C	0/ 5	1620	4555	5300	28	17:41:46.5	01	17.3
803	BEACON	3C	1/ 2	1918	4555	5400	58	17:41:59.4	01	12.9
805	BEACON	3C	2/ 4	2263	4555	5400	52	17:42:24.6	01	25.2
806	BEACON	3C	2/ 7	2424	4555	5400	54	17:42:37.0	01	12.4
807	BEACON	3C	3/ 1	2585	4555	5400	52	17:42:49.6	01	12.6
808	BEACON	3C	3/ 1	2732	4555	5400	56	17:43:02.0	01	12.4
809	BEACON	3C	3/ 1	2871	4555	5400	52	17:43:14.5	01	12.5
810	BEACON	3C	2/ 7	3007	4555	5400	56	17:43:26.9	01	12.4
811	BEACON	3C	2/ 4	3129	4555	5400	50	17:43:39.3	01	12.4
812	BEACON	3C	1/ 7	3242	4555	5400	46	17:43:51.7	01	12.4
813	BEACON	3C	1/ 2	3361	4555	5400	52	17:44:04.1	01	12.4
814	BEACON	3C	0/ 6	3742	4555	5400	66	17:44:17.2	01	13.1
816	BEACON	3C	0/ 6	1207	4555	5400	74	17:44:33.9	01	16.7
817	BEACON	3C	1/ 3	1530	4555	5400	54	17:44:46.9	01	13.0
818	BEACON	3C	1/ 7	1745	4555	5400	48	17:44:59.5	01	12.6
819	BEACON	3C	2/ 3	1936	4555	5400	52	17:45:12.1	01	12.6
820	BEACON	3C	2/ 4	2142	4555	5400	16	17:45:24.7	01	12.6
821	BEACON	3C	2/ 5	2299	4555	5400	52	17:45:37.4	01	12.7
822	BEACON	3C	2/ 4	2495	4555	5400	52	17:45:49.9	01	12.5
823	BEACON	3C	2/ 2	2710	4555	5400	50	17:46:02.6	01	12.7
824	BEACON	3C	1/ 7	2959	4555	5400	54	17:46:15.3	01	12.7
825	BEACON	3C	1/ 4	3284	4555	5400	54	17:46:28.3	01	13.0
826	BEACON	3C	1/ 2	3771	4555	5400	50	17:46:41.8	01	13.5
828	BEACON	3C	1/ 2	272	4555	5400	48	17:46:55.6	01	13.8
829	BEACON	3C	1/ 6	706	4555	5400	52	17:47:08.9	01	13.3
830	BEACON	3C	2/ 2	965	4555	5400	54	17:47:21.7	01	12.8
831	BEACON	3C	3/ 1	1096	4555	5400	54	17:47:34.1	01	12.4
832	BEACON	3C	3/ 7	1164	4555	5400	54	17:47:46.4	01	12.3
833	BEACON	3C	4/ 6	1219	4555	5400	48	17:47:58.5	01	12.1
834	BEACON	3C	5/ 4	1270	4555	5400	54	17:48:10.7	01	12.2
835	BEACON	3C	6/ 2	1308	4555	5400	52	17:48:23.0	01	12.3
836	BEACON	3C	7/ 1	1338	4555	5400	54	17:48:35.1	01	12.1
837	BEACON	3C	7/ 7	1356	4555	5400	52	17:48:47.2	01	12.1
838	BEACON	3C	8/ 6	1361	4555	5400	52	17:48:59.2	01	12.0
839	BEACON	3C	9/ 5	1361	4555	5400	52	17:49:11.2	01	12.0
840	BEACON	3C	10/ 3	1358	4555	5400	52	17:49:23.3	01	12.1
841	BEACON	3C	11/ 2	1361	4555	5300	52	17:49:35.3	01	12.0
842	BEACON	3C	12/ 1	1363	4555	5400	52	17:49:47.4	01	12.1
843	BEACON	3C	12/ 7	1364	4555	5400	52	17:49:59.4	01	12.0
844	BEACON	3C	13/ 6	1365	4555	5400	54	17:50:11.4	01	12.0
845	BEACON	3C	14/ 4	1367	4555	5400	52	17:50:23.5	01	12.1
846	BEACON	3C	15/ 3	1369	4555	5300	50	17:50:35.6	01	12.1
847	BEACON	3C	16/ 1	1369	4555	5100	50	17:50:47.6	01	12.0
848	BEACON	3C	16/ 7	1367	4555	4700	46	17:50:59.6	01	12.0
849	BEACON	3C	17/ 6	1365	4555	4200	46	17:51:11.6	01	12.0
850	BEACON	3C	18/ 4	1366	4555	3900	50	17:51:23.7	01	12.1
851	BEACON	3C	19/ 2	1364	4555	3700	52	17:51:35.7	01	12.0
852	BEACON	3C	19/ 7	1366	4555	3600	52	17:51:47.8	01	12.1
853	BEACON	3C	20/ 4	1364	4555	3600	50	17:51:59.8	01	12.0
854	BEACON	3C	21/ 1	1360	4555	3600	52	17:52:11.9	01	12.1
855	BEACON	3C	21/ 6	1358	4555	3500	50	17:52:23.9	01	12.0
856	BEACON	3C	22/ 3	1357	4555	3500	52	17:52:35.9	01	12.0
857	BEACON	3C	22/ 7	1356	4555	3400	36	17:52:47.9	01	12.0
858	BEACON	3C	23/ 3	1359	4555	3400	30	17:52:59.9	01	12.0

859 BEACON	3C	23/ 6	1371	4555	3400	30 17:53:12.0	01	12.1
860 BEACON	3C	24/ 2	1382	4555	3300	48 17:53:24.1	01	12.1
861 BEACON	3C	24/ 5	1381	4555	3100	48 17:53:36.2	01	12.1

CD RECORD 11/06/95 001 002 003 QJM 004 005 006 XYZ
 QJM MODE/S FLIGHT CHECK 11-06-95

SCAN	MSG	FLAGS	RNG	AZ	3/A	ALT	RL	TIME	PORT	DELTA
862	BEACON	3C	25/ 1	1376	4555	3000	46	17:53:48.1	01	11.9
863	BEACON	3C	25/ 3	1372	4555	2900	52	17:54:00.2	01	12.1
864	BEACON	3C	25/ 4	1361	4555	2700	54	17:54:12.2	01	12.0
865	BEACON	3C	25/ 3	1351	4555	2600	50	17:54:24.2	01	12.0
866	BEACON	3C	25/ 2	1340	4555	2300	50	17:54:36.2	01	12.0
867	BEACON	3C	25/ 1	1332	4555	2200	38	17:54:48.2	01	12.0
868	BEACON	3C	25/ 0	1323	4555	2100	34	17:55:00.3	01	12.1

QJM 01,02,03

RECORDED:
11/07/95

PLOTCD VERSION 69
 (C)1995 PDS

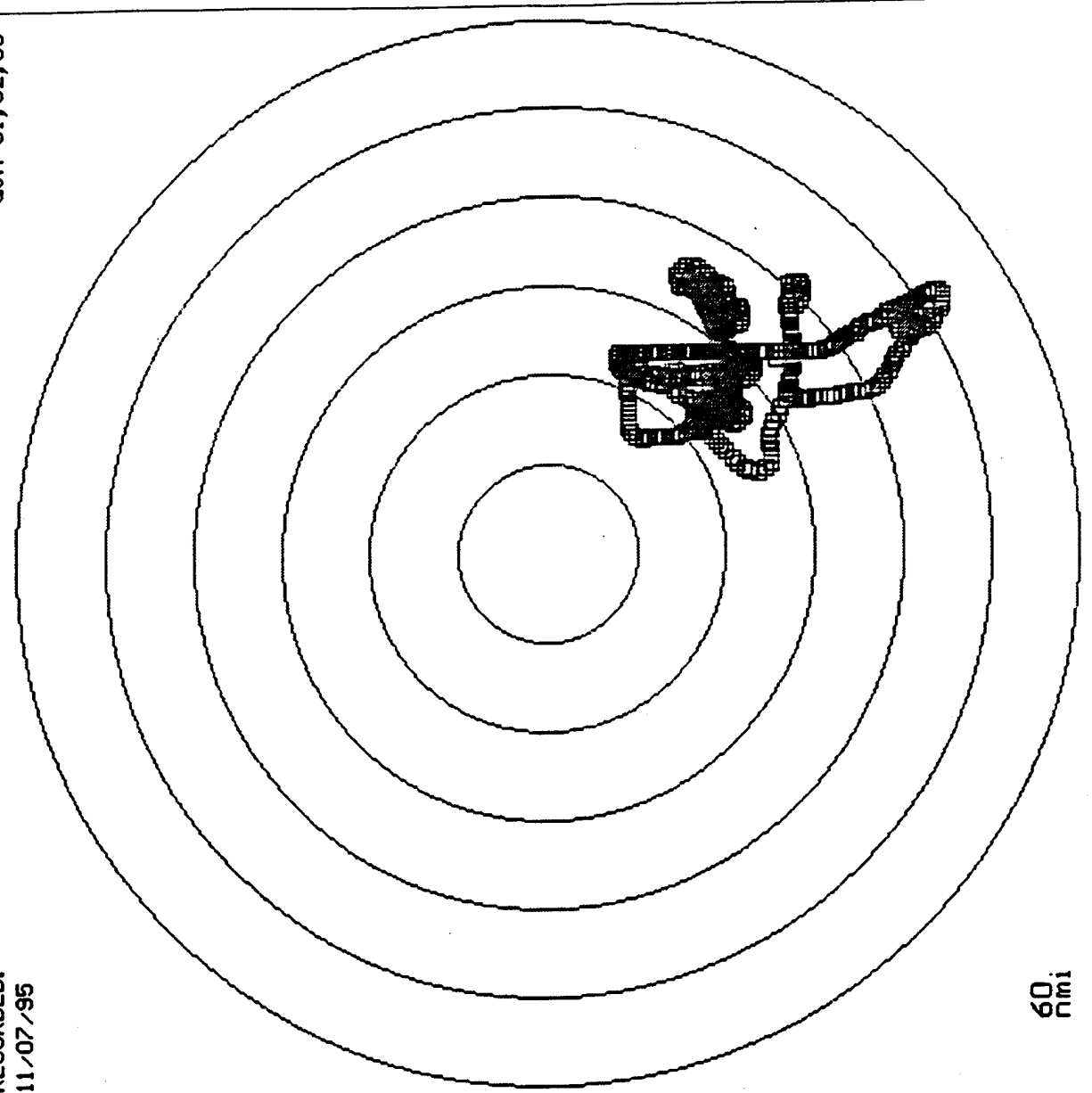
FILENAME: QJM1107A.MX6
SCANS: 1 THROUGH 1170
Mode 3/A Code 4207
RdrBcn ☐ Disabled
Radar ☐ Disabled
Beacon ☐ Enabled
UX ☒ Disabled

Altitude = -1000 to 100000 ft.

RdrBcn count = 0
Beacon count = 591
Radar count = 0
UX count = 0

Radar = 0.0 %
Reinforced

- [F1] FILE [Alt-F1] HELP
- [F2] ZOOM [Alt-F2] NOTE
- [F3] TARGET [Alt-F3] ID
- [F4] SCANS [Alt-F4] SETUP
- [F5] RANGE [Alt-F5] STATS
- [F9] PRINT [t/-] STEP
- [F10] QUIT



CD RECORD 11/07/95 001 002 003 QJM 004 005 006 XYZ
QJM FLIGHT CHECK GRI ILS 07 NOV 95

SCAN	MSG	FLAGS	RNG	AZ	3/A	ALT	RL	TIME	PORT	DELTA
1	BEACON	3C	27/ 0	1495	4207	3500	48	08:53:19.9	01	0.0
2	BEACON	3C	27/ 4	1509	4207	3300	52	08:53:31.9	01	12.0
3	BEACON	3C	28/ 1	1524	4207	3200	54	08:53:44.0	01	12.1
4	BEACON	3C	28/ 6	1535	4207	3100	54	08:53:56.1	01	12.1
5	BEACON	3C	29/ 4	1538	4207	3100	48	08:54:08.1	01	12.0
6	BEACON	3C	30/ 1	1534	4207	3200	52	08:54:20.2	01	12.1
7	BEACON	3C	30/ 5	1525	4207	3100	54	08:54:32.2	01	12.0
8	BEACON	3C	30/ 5	1511	4207	3100	52	08:54:44.2	01	12.0
9	BEACON	3C	30/ 3	1502	4207	3200	42	08:54:56.2	01	12.0
10	BEACON	3C	29/ 7	1493	4207	3100	46	08:55:08.3	01	12.1
11	BEACON	3C	29/ 4	1485	4207	3100	48	08:55:20.3	01	12.0
12	BEACON	3C	29/ 1	1477	4207	3100	50	08:55:32.3	01	12.0
13	BEACON	3C	28/ 6	1465	4207	3200	52	08:55:44.3	01	12.0
14	BEACON	3C	28/ 3	1456	4207	3100	48	08:55:56.4	01	12.1
15	BEACON	3C	28/ 0	1446	4207	3200	50	08:56:08.4	01	12.0
16	BEACON	3C	27/ 5	1433	4207	3100	50	08:56:20.4	01	12.0
17	BEACON	3C	27/ 3	1422	4207	3100	46	08:56:32.4	01	12.0
18	BEACON	3C	27/ 0	1410	4207	3100	40	08:56:44.4	01	12.0
19	BEACON	3C	26/ 5	1399	4207	3100	44	08:56:56.5	01	12.1
20	BEACON	3C	26/ 0	1393	4207	3200	52	08:57:08.5	01	12.0
21	BEACON	3C	25/ 3	1397	4207	3200	44	08:57:20.5	01	12.0
22	BEACON	3C	24/ 7	1409	4207	3100	46	08:57:32.6	01	12.1
23	BEACON	3C	24/ 5	1426	4207	3100	42	08:57:44.7	01	12.1
24	BEACON	3C	24/ 5	1450	4207	3100	46	08:57:56.9	01	12.2
25	BEACON	3C	25/ 0	1463	4207	3100	52	08:58:09.0	01	12.1
26	BEACON	3C	25/ 4	1482	4207	3100	52	08:58:21.0	01	12.0
27	BEACON	3C	25/ 7	1499	4207	3200	50	08:58:33.2	01	12.2
28	BEACON	3C	26/ 3	1513	4207	3200	48	08:58:45.3	01	12.1
29	BEACON	3C	26/ 7	1529	4207	3200	50	08:58:57.4	01	12.1
30	BEACON	3C	27/ 3	1543	4207	3200	50	08:59:09.5	01	12.1
31	BEACON	3C	28/ 0	1557	4207	3300	52	08:59:21.6	01	12.1
32	BEACON	3C	28/ 4	1569	4207	3500	50	08:59:33.7	01	12.1
33	BEACON	3C	29/ 0	1582	4207	3700	50	08:59:45.8	01	12.1
34	BEACON	3C	29/ 5	1586	4207	3800	46	08:59:57.8	01	12.0
35	BEACON	3C	30/ 2	1582	4207	3800	40	09:00:09.8	01	12.0
36	BEACON	3C*	30/ 6	1576	4207	3800	48	09:00:21.9	01	12.1
37	BEACON	3C	31/ 0	1565	4207	3800	50	09:00:33.9	01	12.0
38	BEACON	3C	31/ 0	1555	4207	3800	50	09:00:45.9	01	12.0
39	BEACON	3C	31/ 2	1544	4207	3800	52	09:00:57.9	01	12.0
40	BEACON	3C	31/ 2	1532	4207	3800	48	09:01:09.9	01	12.0
41	BEACON	3C	31/ 1	1525	4207	3900	48	09:01:22.0	01	12.1
42	BEACON	3C	30/ 6	1520	4207	3900	40	09:01:34.0	01	12.0
43	BEACON	3C	30/ 4	1512	4207	3800	46	09:01:46.1	01	12.1
44	BEACON	3C	30/ 1	1501	4207	3800	42	09:01:58.1	01	12.0
45	BEACON	3C	29/ 7	1494	4207	3800	50	09:02:10.1	01	12.0
46	BEACON	3C	29/ 4	1485	4207	3800	32	09:02:22.1	01	12.0
47	BEACON	3C	29/ 2	1479	4207	3800	48	09:02:34.2	01	12.1
48	BEACON	3C	28/ 7	1470	4207	3800	48	09:02:46.2	01	12.0
49	BEACON	3C	28/ 5	1463	4207	3800	48	09:02:58.3	01	12.1
50	BEACON	3C	28/ 3	1456	4207	3700	46	09:03:10.3	01	12.0
51	BEACON	3C	28/ 1	1448	4207	3500	40	09:03:22.3	01	12.0
52	BEACON	3C	27/ 7	1444	4207	3400	32	09:03:34.4	01	12.1
53	BEACON	3C	27/ 5	1435	4207	3300	44	09:03:46.4	01	12.0
54	BEACON	3C	27/ 3	1426	4207	3200	46	09:03:58.4	01	12.0
55	BEACON	3C	27/ 1	1417	4207	3000	48	09:04:10.4	01	12.0

56 BEACON	3C	26/ 7	1410	4207	2900	48 09:04:22.5	01	12.1
57 BEACON	3C	26/ 6	1400	4207	2800	50 09:04:34.5	01	12.0
58 BEACON	3C	26/ 4	1391	4207	2600	50 09:04:46.5	01	12.0

CD RECORD 11/07/95 001 002 003 QJM 004 005 006 XYZ
QJM FLIGHT CHECK GRI ILS 07 NOV 95

SCAN	MSG	FLAGS	RNG	AZ	3/A	ALT	RL	TIME	PORT	DELTA
59	BEACON	3C	26/ 2	1383	4207	2500	52	09:04:58.6	01	12.1
60	BEACON	3C	26/ 0	1374	4207	2400	50	09:05:10.6	01	12.0
61	BEACON	3C	25/ 6	1365	4207	2300	50	09:05:22.6	01	12.0
62	BEACON	3C	25/ 4	1354	4207	2100	50	09:05:34.7	01	12.1
63	BEACON	3C	25/ 3	1343	4207	2000	48	09:05:46.7	01	12.0
64	BEACON	3C	25/ 1	1333	4207	1900	38	09:05:58.7	01	12.0
68	BEACON	3C	24/ 1	1279	4207	2100	52	09:06:58.8	01	60.1
69	BEACON	3C	23/ 6	1271	4207	2600	50	09:07:10.8	01	12.0
70	BEACON	3C	23/ 3	1268	4207	3000	46	09:07:22.9	01	12.1
71	BEACON	3C	22/ 7	1273	4207	3400	52	09:07:35.0	01	12.1
72	BEACON	3C	22/ 3	1280	4207	3600	48	09:07:47.0	01	12.0
73	BEACON	3C	22/ 0	1282	4207	3700	42	09:07:59.1	01	12.1
74	BEACON	3C	21/ 4	1292	4207	3800	42	09:08:11.2	01	12.1
75	BEACON	3C	21/ 1	1299	4207	3800	50	09:08:23.2	01	12.0
76	BEACON	3C	20/ 5	1306	4207	3800	48	09:08:35.3	01	12.1
77	BEACON	3C	20/ 1	1316	4207	3800	48	09:08:47.4	01	12.1
78	BEACON	3C	19/ 6	1325	4207	3800	52	09:08:59.4	01	12.0
79	BEACON	3C	19/ 2	1334	4207	3800	48	09:09:11.5	01	12.1
80	BEACON	3C	18/ 7	1343	4207	3800	52	09:09:23.6	01	12.1
81	BEACON	3C	18/ 3	1350	4207	3800	48	09:09:35.7	01	12.1
82	BEACON	3C	17/ 7	1363	4207	3800	50	09:09:47.8	01	12.1
83	BEACON	3C	17/ 4	1374	4207	3800	44	09:09:59.9	01	12.1
84	BEACON	3C	17/ 0	1386	4207	3800	50	09:10:12.0	01	12.1
85	BEACON	3C	16/ 5	1397	4207	3800	50	09:10:24.1	01	12.1
86	BEACON	3C	16/ 2	1418	4207	3800	46	09:10:36.2	01	12.1
87	BEACON	3C	16/ 2	1446	4207	3800	56	09:10:48.3	01	12.1
88	BEACON	3C	16/ 4	1474	4207	3700	52	09:11:00.4	01	12.1
89	BEACON	3C	17/ 0	1490	4207	3700	54	09:11:12.5	01	12.1
90	BEACON	3C	17/ 3	1508	4207	3800	52	09:11:24.6	01	12.1
91	BEACON	3C	17/ 6	1523	4207	3800	52	09:11:36.7	01	12.1
92	BEACON	3C	18/ 2	1539	4207	3700	52	09:11:48.8	01	12.1
93	BEACON	3C	18/ 6	1555	4207	3700	54	09:12:00.9	01	12.1
94	BEACON	3C	19/ 2	1563	4207	3800	54	09:12:13.0	01	12.1
95	BEACON	3C	19/ 7	1571	4207	3800	52	09:12:25.1	01	12.1
96	BEACON	3C	20/ 3	1578	4207	3800	54	09:12:37.1	01	12.0
97	BEACON	3C	21/ 0	1585	4207	3800	50	09:12:49.2	01	12.1
98	BEACON	3C	21/ 5	1590	4207	3800	50	09:13:01.3	01	12.1
99	BEACON	3C	22/ 2	1596	4207	3800	52	09:13:13.3	01	12.0
100	BEACON	3C	23/ 0	1604	4207	3800	52	09:13:25.4	01	12.1
101	BEACON	3C	23/ 5	1608	4207	3800	54	09:13:37.5	01	12.1
102	BEACON	3C	24/ 2	1613	4207	3800	50	09:13:49.5	01	12.0
103	BEACON	3C	24/ 7	1618	4207	3800	54	09:14:01.6	01	12.1
104	BEACON	3C	25/ 5	1621	4207	3800	54	09:14:13.7	01	12.1
105	BEACON	3C	26/ 1	1617	4207	3800	54	09:14:25.7	01	12.0
106	BEACON	3C	26/ 5	1606	4207	3800	52	09:14:37.8	01	12.1
107	BEACON	3C	27/ 1	1598	4207	3700	52	09:14:49.8	01	12.0
108	BEACON	3C	27/ 5	1585	4207	3500	46	09:15:01.8	01	12.0
109	BEACON	3C	27/ 7	1574	4207	3500	52	09:15:13.8	01	12.0
110	BEACON	3C	28/ 2	1563	4207	3500	50	09:15:25.8	01	12.0
111	BEACON	3C	28/ 4	1553	4207	3500	50	09:15:37.9	01	12.1
112	BEACON	3C	28/ 6	1543	4207	3500	50	09:15:49.9	01	12.0
113	BEACON	3C	29/ 0	1531	4207	3500	52	09:16:01.9	01	12.0
114	BEACON	3C	29/ 1	1522	4207	3500	54	09:16:14.0	01	12.1
115	BEACON	3C	29/ 3	1511	4207	3500	52	09:16:25.9	01	11.9
116	BEACON	3C	29/ 4	1500	4207	3500	46	09:16:38.0	01	12.1

117 BEACON	3C	29/ 4	1493	4207	3500	52 09:16:50.0	01	12.0
118 BEACON	3C*	29/ 2	1481	4207	3500	48 09:17:02.0	01	12.0
119 BEACON	3C	29/ 0	1476	4207	3500	50 09:17:14.1	01	12.1

CD RECORD 11/07/95 001 002 003 QJM 004 005 006 XYZ
QJM FLIGHT CHECK GRI ILS 07 NOV 95

SCAN	MSG	FLAGS	RNG	AZ	3/A	ALT	RL	TIME	PORT	DELTA
120	BEACON	3C	28/ 6	1469	4207	3500	50	09:17:26.1	01	12.0
121	BEACON	3C	28/ 4	1462	4207	3500	42	09:17:38.1	01	12.0
122	BEACON	3C	28/ 2	1451	4207	3500	50	09:17:50.2	01	12.1
123	BEACON	3C	28/ 1	1448	4207	3500	50	09:18:02.2	01	12.0
124	BEACON	3C	27/ 7	1440	4207	3400	46	09:18:14.2	01	12.0
125	BEACON	3C	27/ 5	1434	4207	3300	46	09:18:26.2	01	12.0
126	BEACON	3C	27/ 3	1424	4207	3200	50	09:18:38.3	01	12.1
127	BEACON	3C	27/ 1	1417	4207	3000	46	09:18:50.3	01	12.0
128	BEACON	3C	26/ 7	1409	4207	2900	54	09:19:02.3	01	12.0
129	BEACON	3C	26/ 5	1399	4207	2700	46	09:19:14.4	01	12.1
130	BEACON	3C	26/ 3	1392	4207	2600	46	09:19:26.4	01	12.0
131	BEACON	3C	26/ 2	1383	4207	2500	52	09:19:38.4	01	12.0
132	BEACON	3C	26/ 0	1373	4207	2400	52	09:19:50.5	01	12.1
133	BEACON	3C	25/ 6	1365	4207	2300	54	09:20:02.5	01	12.0
134	BEACON	3C	25/ 4	1354	4207	2100	50	09:20:14.5	01	12.0
135	BEACON	3C	25/ 3	1342	4207	2000	48	09:20:26.5	01	12.0
136	BEACON	3C	25/ 1	1332	4207	1900	28	09:20:38.5	01	12.0
141	BEACON	3C	24/ 1	1278	4207	2200	48	09:21:38.7	01	60.2
142	BEACON	3C	24/ 0	1267	4207	2700	48	09:21:50.7	01	12.0
143	BEACON	3C	23/ 6	1258	4207	3200	50	09:22:02.7	01	12.0
144	BEACON	3C	23/ 5	1246	4207	3600	52	09:22:14.7	01	12.0
145	BEACON	3C	23/ 1	1243	4207	3700	30	09:22:26.7	01	12.0
146	BEACON	3C	22/ 5	1245	4207	3800	46	09:22:38.8	01	12.1
147	BEACON	3C	22/ 1	1257	4207	3700	48	09:22:50.9	01	12.1
148	BEACON	3C	22/ 0	1273	4207	3800	46	09:23:03.1	01	12.2
149	BEACON	3C	21/ 7	1291	4207	3800	50	09:23:15.1	01	12.0
150	BEACON	3C	21/ 7	1312	4207	3800	50	09:23:27.2	01	12.1
151	BEACON	3C	21/ 7	1332	4207	3800	52	09:23:39.4	01	12.2
152	BEACON	3C	22/ 0	1353	4207	3800	50	09:23:51.4	01	12.0
153	BEACON	3C	22/ 0	1374	4207	3800	48	09:24:03.6	01	12.2
154	BEACON	3C	22/ 2	1396	4207	3800	52	09:24:15.7	01	12.1
155	BEACON	3C	22/ 4	1416	4207	3800	54	09:24:27.8	01	12.1
157	BEACON	3C	22/ 6	1456	4207	3700	52	09:24:52.0	01	24.2
158	BEACON	3C	22/ 7	1476	4207	3600	52	09:25:04.1	01	12.1
159	BEACON	3C	23/ 0	1496	4207	3300	50	09:25:16.3	01	12.2
160	BEACON	3C	23/ 2	1516	4207	3200	50	09:25:28.4	01	12.1
161	BEACON	3C	23/ 3	1535	4207	3200	52	09:25:40.5	01	12.1
162	BEACON	3C	23/ 4	1553	4207	3200	50	09:25:52.6	01	12.1
163	BEACON	3C	23/ 5	1572	4207	3200	50	09:26:04.7	01	12.1
164	BEACON	3C	23/ 7	1590	4207	3200	52	09:26:16.8	01	12.1
165	BEACON	3C	24/ 1	1606	4207	3200	52	09:26:28.9	01	12.1
166	BEACON	3C	24/ 3	1622	4207	3200	52	09:26:41.0	01	12.1
167	BEACON	3C	24/ 6	1637	4207	3200	52	09:26:53.1	01	12.1
168	BEACON	3C	25/ 2	1652	4207	3200	56	09:27:05.2	01	12.2
169	BEACON	3C	25/ 7	1657	4207	3200	52	09:27:17.2	01	12.0
170	BEACON	3C	26/ 4	1656	4207	3200	46	09:27:29.3	01	12.1
171	BEACON	3C	27/ 0	1650	4207	3200	52	09:27:41.3	01	12.0
172	BEACON	3C	27/ 0	1636	4207	3100	54	09:27:53.3	01	12.0
173	BEACON	3C*	26/ 6	1623	4207	3100	52	09:28:05.3	01	12.0
174	BEACON	3C	26/ 4	1612	4207	3200	52	09:28:17.4	01	12.1
175	BEACON	3C	26/ 3	1599	4207	3200	48	09:28:29.4	01	12.0
176	BEACON	3C	26/ 2	1588	4207	3200	54	09:28:41.4	01	12.0
177	BEACON	3C	26/ 1	1573	4207	3200	54	09:28:53.4	01	12.0
178	BEACON	3C	26/ 2	1562	4207	3200	54	09:29:05.4	01	12.0
179	BEACON	3C	26/ 5	1550	4207	3200	52	09:29:17.4	01	12.0

180	BEACON	3C	27/ 0	1538	4207	3200	54	09:29:29.5	01	12.1
181	BEACON	3C	27/ 4	1528	4207	3200	54	09:29:41.5	01	12.0
182	BEACON	3C	28/ 0	1520	4207	3200	54	09:29:53.6	01	12.1

CD RECORD 11/07/95 001 002 003 QJM 004 005 006 XYZ
QJM FLIGHT CHECK GRI ILS 07 NOV 95

SCAN	MSG	FLAGS	RNG	AZ	3/A	ALT	RL	TIME	PORT	DELTA
183	BEACON	3C	28/ 4	1511	4207	3200	50	09:30:05.5	01	11.9
184	BEACON	3C	29/ 0	1502	4207	3200	52	09:30:17.6	01	12.1
185	BEACON	3C	29/ 4	1493	4207	3200	50	09:30:29.5	01	11.9
186	BEACON	3C	29/ 7	1483	4207	3200	50	09:30:41.6	01	12.1
187	BEACON	3C	30/ 3	1476	4207	3200	50	09:30:53.6	01	12.0
188	BEACON	3C	30/ 6	1465	4207	3200	52	09:31:05.6	01	12.0
189	BEACON	3C	31/ 1	1456	4207	3200	48	09:31:17.7	01	12.1
190	BEACON	3C	31/ 4	1445	4207	3200	50	09:31:29.8	01	12.1
191	BEACON	3C	31/ 7	1436	4207	3200	50	09:31:41.7	01	11.9
192	BEACON	3C	32/ 2	1424	4207	3200	44	09:31:53.7	01	12.0
193	BEACON	3C	32/ 4	1416	4207	3200	52	09:32:05.8	01	12.1
194	BEACON	3C	32/ 6	1403	4207	3200	50	09:32:17.8	01	12.0
195	BEACON	3C	33/ 0	1394	4207	3200	52	09:32:29.8	01	12.0
196	BEACON	3C	33/ 2	1385	4207	3200	52	09:32:41.8	01	12.0
197	BEACON	3C	33/ 6	1377	4207	3200	52	09:32:53.9	01	12.1
198	BEACON	3C	34/ 3	1374	4207	3200	52	09:33:05.9	01	12.0
199	BEACON	3C	35/ 0	1377	4207	3200	54	09:33:18.0	01	12.1
200	BEACON	3C	35/ 4	1388	4207	3200	52	09:33:30.1	01	12.1
201	BEACON	3C	35/ 6	1399	4207	3200	52	09:33:42.1	01	12.0
202	BEACON	3C	35/ 5	1412	4207	3200	52	09:33:54.2	01	12.1
203	BEACON	3C	35/ 2	1421	4207	3200	54	09:34:06.3	01	12.1
204	BEACON	3C	34/ 6	1428	4207	3200	54	09:34:18.4	01	12.1
205	BEACON	3C	34/ 3	1434	4207	3200	50	09:34:30.5	01	12.1
206	BEACON	3C	33/ 7	1444	4207	3200	54	09:34:42.5	01	12.0
207	BEACON	3C	33/ 3	1449	4207	3200	50	09:34:54.7	01	12.2
208	BEACON	3C	32/ 7	1456	4207	3200	52	09:35:06.7	01	12.0
209	BEACON	3C	32/ 3	1460	4207	3200	50	09:35:16.8	01	12.1
210	BEACON	3C	31/ 7	1463	4207	3200	46	09:35:30.8	01	12.0
211	BEACON	3C	31/ 3	1457	4207	3200	44	09:35:42.9	01	12.1
212	BEACON	3C	31/ 2	1449	4207	3200	50	09:35:54.9	01	12.0
213	BEACON	3C	31/ 3	1439	4207	3200	52	09:36:06.9	01	12.0
214	BEACON	3C	31/ 5	1425	4207	3200	50	09:36:18.9	01	12.0
215	BEACON	3C	31/ 7	1415	4207	3200	48	09:36:30.9	01	12.0
216	BEACON	3C	32/ 1	1404	4207	3200	50	09:36:42.9	01	12.0
217	BEACON	3C	32/ 4	1392	4207	3200	50	09:36:55.0	01	12.1
218	BEACON	3C	32/ 6	1383	4207	3200	48	09:37:07.0	01	12.0
219	BEACON	3C	33/ 1	1374	4207	3100	54	09:37:19.0	01	12.0
220	BEACON	3C	33/ 6	1368	4207	3200	52	09:37:31.0	01	12.0
221	BEACON	3C	34/ 2	1372	4207	3100	54	09:37:43.1	01	12.1
222	BEACON	3C	34/ 6	1377	4207	3200	52	09:37:55.2	01	12.1
223	BEACON	3C	34/ 7	1387	4207	3200	54	09:38:07.2	01	12.0
224	BEACON	3C*	34/ 6	1398	4207	3200	54	09:38:19.3	01	12.1
225	BEACON	3C	34/ 3	1404	4207	3200	50	09:38:31.4	01	12.1
226	BEACON	3C	34/ 0	1406	4207	3200	48	09:38:43.5	01	12.1
227	BEACON	3C	33/ 5	1400	4207	3200	52	09:38:55.5	01	12.0
228	BEACON	3C	33/ 4	1389	4207	3200	50	09:39:07.5	01	12.0
229	BEACON	3C	33/ 5	1382	4207	3200	54	09:39:19.6	01	12.1
230	BEACON	3C	33/ 5	1370	4207	3200	52	09:39:31.6	01	12.0
231	BEACON	3C	33/ 5	1361	4207	3200	54	09:39:43.6	01	12.0
232	BEACON	3C	33/ 5	1352	4207	3200	54	09:39:55.6	01	12.0
233	BEACON	3C	33/ 6	1342	4207	3200	56	09:40:07.7	01	12.1
234	BEACON	3C	34/ 2	1335	4207	3200	54	09:40:19.7	01	12.0
235	BEACON	3C*	34/ 7	1335	4207	3200	52	09:40:31.8	01	12.1
236	BEACON	3C	35/ 3	1342	4207	3200	54	09:40:43.9	01	12.1
037	BEACON	3C	35/ 5	1352	4207	3100	50	09:40:55.9	01	12.0

238 BEACON	3C	35/ 5	1363	4207	3200	52 09:41:08.0	01	12.1
239 BEACON	3C	35/ 3	1372	4207	3200	52 09:41:20.1	01	12.1
240 BEACON	3C	35/ 0	1378	4207	3200	54 09:41:32.1	01	12.0

CD RECORD 11/07/95 001 002 003 QJM 004 005 006 XYZ
QJM FLIGHT CHECK GRI ILS 07 NOV 95

SCAN	MSG	FLAGS	RNG	AZ	3/A	ALT	RL	TIME	PORT	DELTA
241	BEACON	3C	34/ 5	1386	4207	3200	52	09:41:44.2	01	12.1
242	BEACON	3C	34/ 2	1392	4207	3200	50	09:41:56.3	01	12.1
243	BEACON	3C	33/ 7	1400	4207	3200	48	09:42:08.4	01	12.1
244	BEACON	3C	33/ 4	1408	4207	3200	52	09:42:20.4	01	12.0
245	BEACON	3C	33/ 1	1415	4207	3200	50	09:42:32.5	01	12.1
246	BEACON	3C	32/ 6	1421	4207	3200	52	09:42:44.6	01	12.1
247	BEACON	3C	32/ 3	1430	4207	3200	52	09:42:56.7	01	12.1
248	BEACON	3C	31/ 7	1438	4207	3200	52	09:43:08.8	01	12.1
249	BEACON	3C	31/ 4	1446	4207	3200	54	09:43:20.9	01	12.1
250	BEACON	3C	31/ 1	1456	4207	3200	54	09:43:32.9	01	12.0
251	BEACON	3C	30/ 6	1463	4207	3200	50	09:43:45.0	01	12.1
252	BEACON	3C	30/ 3	1472	4207	3200	50	09:43:57.1	01	12.1
253	BEACON	3C	30/ 0	1481	4207	3200	50	09:44:09.1	01	12.0
254	BEACON	3C	29/ 4	1489	4207	3200	50	09:44:21.2	01	12.1
255	BEACON	3C	29/ 1	1497	4207	3200	46	09:44:33.3	01	12.1
256	BEACON	3C	28/ 5	1507	4207	3200	50	09:44:45.4	01	12.1
257	BEACON	3C	28/ 2	1513	4207	3200	52	09:44:57.5	01	12.1
258	BEACON	3C	27/ 6	1519	4207	3200	52	09:45:09.6	01	12.1
259	BEACON	3C	27/ 2	1525	4207	3200	52	09:45:21.7	01	12.1
260	BEACON	3C	26/ 7	1530	4207	3100	48	09:45:33.7	01	12.0
261	BEACON	3C	26/ 3	1536	4207	3200	52	09:45:45.8	01	12.1
262	BEACON	3C	25/ 7	1540	4207	3200	46	09:45:57.9	01	12.1
263	BEACON	3C	25/ 4	1544	4207	3200	48	09:46:09.9	01	12.0
264	BEACON	3C	25/ 0	1549	4207	3200	48	09:46:22.0	01	12.1
265	BEACON	3C	24/ 4	1553	4207	3200	48	09:46:34.1	01	12.1
266	BEACON	3C	24/ 1	1555	4207	3200	46	09:46:46.1	01	12.0
267	BEACON	3C	23/ 4	1558	4207	3100	48	09:46:58.2	01	12.1
268	BEACON	3C	23/ 1	1564	4207	3200	48	09:47:10.3	01	12.1
269	BEACON	3C	22/ 7	1574	4207	3200	50	09:47:22.3	01	12.0
270	BEACON	3C	22/ 6	1594	4207	3200	52	09:47:34.4	01	12.1
271	BEACON	3C	22/ 4	1606	4207	3200	48	09:47:46.5	01	12.1
272	BEACON	3C	22/ 1	1614	4207	3200	52	09:47:58.6	01	12.1
273	BEACON	3C	21/ 5	1609	4207	3200	48	09:48:10.6	01	12.0
274	BEACON	3C	21/ 3	1596	4207	3200	50	09:48:22.7	01	12.1
275	BEACON	3C	21/ 3	1582	4207	3200	50	09:48:34.7	01	12.0
276	BEACON	3C	21/ 5	1569	4207	3200	50	09:48:46.7	01	12.0
277	BEACON	3C	22/ 1	1558	4207	3200	46	09:48:58.7	01	12.0
278	BEACON	3C	22/ 5	1555	4207	3200	48	09:49:10.8	01	12.1
279	BEACON	3C	23/ 3	1558	4207	3200	50	09:49:22.8	01	12.0
280	BEACON	3C	24/ 0	1558	4207	3200	50	09:49:34.9	01	12.1
281	BEACON	3C	24/ 4	1555	4207	3200	50	09:49:46.9	01	12.0
282	BEACON	3C	25/ 1	1551	4207	3200	50	09:49:59.0	01	12.1
283	BEACON	3C	25/ 6	1546	4207	3200	52	09:50:11.0	01	12.0
284	BEACON	3C	26/ 2	1541	4207	3200	50	09:50:23.1	01	12.1
285	BEACON	3C	26/ 7	1534	4207	3200	58	09:50:35.1	01	12.0
286	BEACON	3C	27/ 3	1529	4207	3200	52	09:50:47.1	01	12.0
287	BEACON	3C	27/ 7	1521	4207	3200	52	09:50:59.2	01	12.1
288	BEACON	3C	28/ 3	1513	4207	3200	52	09:51:11.3	01	12.1
289	BEACON	3C	28/ 7	1506	4207	3200	52	09:51:23.3	01	12.0
290	BEACON	3C	29/ 2	1498	4207	3100	54	09:51:35.4	01	12.1
291	BEACON	3C	29/ 6	1490	4207	3200	54	09:51:47.3	01	11.9
292	BEACON	3C	30/ 1	1480	4207	3200	52	09:51:59.4	01	12.1
293	BEACON	3C	30/ 5	1473	4207	3200	50	09:52:11.4	01	12.0
294	BEACON	3C	31/ 1	1466	4207	3200	54	09:52:23.4	01	12.0
295	BEACON	3C	31/ 5	1463	4207	3200	52	09:52:35.5	01	12.1

296 BEACON	3C	32/ 2	1465	4207	3200	56 09:52:47.6	01	12.1
297 BEACON	3C	32/ 7	1473	4207	3200	54 09:52:59.6	01	12.0
298 BEACON	3C	33/ 4	1476	4207	3100	52 09:53:11.7	01	12.1

CD RECORD 11/07/95 001 002 003 QJM 004 005 006 XYZ
QJM FLIGHT CHECK GRI ILS 07 NOV 95

SCAN	MSG	FLAGS	RNG	AZ	3/A	ALT	RL	TIME	PORT	DELTA
299	BEACON	3C	34/	1	1477	4207	3200	50	09:53:23.8	01 12.1
300	BEACON	3C	34/	4	1470	4207	3200	50	09:53:35.8	01 12.0
301	BEACON	3C	34/	6	1462	4207	3200	52	09:53:47.8	01 12.0
302	BEACON	3C	34/	5	1453	4207	3200	52	09:53:59.8	01 12.0
303	BEACON	3C	34/	2	1449	4207	3200	54	09:54:11.9	01 12.1
304	BEACON	3C	33/	6	1447	4207	3200	52	09:54:23.9	01 12.0
305	BEACON	3C	33/	2	1444	4207	3200	50	09:54:36.0	01 12.1
306	BEACON	3C	32/	6	1444	4207	3200	52	09:54:48.0	01 12.0
307	BEACON	3C	32/	2	1447	4207	3200	52	09:55:00.1	01 12.1
308	BEACON	3C	31/	7	1450	4207	3200	48	09:55:12.1	01 12.0
309	BEACON	3C	31/	3	1454	4207	3200	50	09:55:24.2	01 12.1
310	BEACON	3C	31/	0	1461	4207	3200	48	09:55:36.4	01 12.2
311	BEACON	3C	30/	5	1468	4207	3200	50	09:55:48.4	01 12.0
312	BEACON	3C	30/	2	1477	4207	3100	48	09:56:00.4	01 12.0
313	BEACON	3C	29/	7	1483	4207	3200	44	09:56:12.5	01 12.1
314	BEACON	3C	29/	4	1493	4207	3200	48	09:56:24.6	01 12.1
315	BEACON	3C	29/	1	1498	4207	3200	52	09:56:36.7	01 12.1
316	BEACON	3C	28/	5	1506	4207	3200	54	09:56:48.8	01 12.1
317	BEACON	3C	28/	2	1512	4207	3200	52	09:57:00.8	01 12.0
318	BEACON	3C	27/	7	1520	4207	3200	58	09:57:12.9	01 12.1
319	BEACON	3C	27/	5	1532	4207	3200	54	09:57:25.0	01 12.1
320	BEACON	3C	27/	6	1546	4207	3200	52	09:57:37.1	01 12.1
321	BEACON	3C	27/	7	1559	4207	3200	54	09:57:49.2	01 12.1
322	BEACON	3C	28/	0	1573	4207	3200	56	09:58:01.3	01 12.1
323	BEACON	3C	27/	7	1584	4207	3200	54	09:58:13.4	01 12.1
324	BEACON	3C	27/	3	1590	4207	3200	50	09:58:25.4	01 12.0
325	BEACON	3C	27/	0	1590	4207	3200	50	09:58:37.5	01 12.1
326	BEACON	3C	26/	5	1584	4207	3200	52	09:58:49.6	01 12.1
327	BEACON	3C	26/	4	1572	4207	3200	52	09:59:01.5	01 11.9
328	BEACON	3C	26/	5	1561	4207	3200	50	09:59:13.6	01 12.1
329	BEACON	3C	26/	7	1549	4207	3100	54	09:59:25.6	01 12.0
330	BEACON	3C	27/	0	1535	4207	3200	54	09:59:37.6	01 12.0
331	BEACON	3C	27/	3	1527	4207	3200	52	09:59:49.7	01 12.1
332	BEACON	3C	27/	6	1518	4207	3200	54	10:00:01.6	01 11.9
333	BEACON	3C	28/	2	1511	4207	3200	52	10:00:13.6	01 12.0
334	BEACON	3C	28/	6	1504	4207	3200	54	10:00:25.7	01 12.1
335	BEACON	3C	29/	2	1496	4207	3200	52	10:00:37.8	01 12.1
336	BEACON	3C	29/	5	1490	4207	3200	54	10:00:49.7	01 11.9
337	BEACON	3C	30/	1	1481	4207	3200	52	10:01:01.7	01 12.0
338	BEACON	3C	30/	4	1472	4207	3200	54	10:01:13.8	01 12.1
339	BEACON	3C	30/	7	1464	4207	3200	54	10:01:25.9	01 12.1
340	BEACON	3C	31/	2	1456	4207	3100	52	10:01:37.9	01 12.0
341	BEACON	3C	31/	4	1446	4207	3200	50	10:01:49.9	01 12.0
342	BEACON	3C	31/	7	1438	4207	3200	50	10:02:02.0	01 12.1
343	BEACON	3C	32/	1	1432	4207	3200	54	10:02:14.0	01 12.0
344	BEACON	3C	32/	3	1422	4207	3200	54	10:02:26.0	01 12.0
345	BEACON	3C	32/	3	1411	4207	3200	52	10:02:38.0	01 12.0
346	BEACON	3C	32/	7	1401	4207	3500	48	10:02:50.1	01 12.1
347	BEACON	3C	33/	0	1391	4207	3900	50	10:03:02.1	01 12.0
348	BEACON	3C	33/	2	1383	4207	4200	54	10:03:14.1	01 12.0
349	BEACON	3C	33/	4	1377	4207	4500	50	10:03:26.2	01 12.1
350	BEACON	3C	33/	5	1365	4207	4700	54	10:03:38.2	01 12.0
351	BEACON	3C	33/	6	1356	4207	4900	56	10:03:50.2	01 12.0
352	BEACON	3C	33/	6	1345	4207	5200	50	10:04:02.3	01 12.1
353	BEACON	3C	33/	4	1337	4207	5400	52	10:04:14.3	01 12.0

354 BEACON	3C	33/ 2	1331	4207	5600	50	10:04:26.3	01	12.0
355 BEACON	3C	33/ 2	1319	4207	5800	50	10:04:38.4	01	12.1
356 BEACON	3C	33/ 5	1314	4207	6000	54	10:04:50.4	01	12.0

CD RECORD 11/07/95 001 002 003 QJM 004 005 006 XYZ
Q, TM FLIGHT CHECK GRI ILS 07 NOV 95

SCAN	MSG	FLAGS	RNG	AZ	3/A	ALT	RL	TIME	PORT	DELTA
357	BEACON	3C	34/ 2	1307	4207	6100	52	10:05:02.4	01	12.0
358	BEACON	3C	34/ 7	1308	4207	6100	52	10:05:14.5	01	12.1
359	BEACON	3C	35/ 4	1318	4207	6100	48	10:05:26.6	01	12.1
360	BEACON	3C	35/ 7	1331	4207	6100	54	10:05:38.7	01	12.1
361	BEACON	3C	35/ 7	1342	4207	6100	52	10:05:50.8	01	12.1
362	BEACON	3C	35/ 5	1356	4207	6100	50	10:06:02.8	01	12.0
363	BEACON	3C	35/ 3	1370	4207	6100	52	10:06:15.0	01	12.2
364	BEACON	3C	35/ 1	1381	4207	6100	50	10:06:27.1	01	12.1
365	BEACON	3C	34/ 6	1392	4207	6100	46	10:06:39.1	01	12.0
366	BEACON	3C	34/ 2	1405	4207	6100	52	10:06:51.2	01	12.1
367	BEACON	3C	33/ 7	1415	4207	6100	50	10:07:03.3	01	12.1
368	BEACON	3C*	33/ 2	1424	4207	6100	50	10:07:15.4	01	12.1
369	BEACON	3C	32/ 5	1429	4207	6100	50	10:07:27.4	01	12.0
370	BEACON	3C	32/ 1	1439	4207	6100	54	10:07:39.6	01	12.2
371	BEACON	3C	31/ 5	1448	4207	6100	52	10:07:51.7	01	12.1
372	BEACON	3C	31/ 1	1459	4207	6100	50	10:08:03.7	01	12.0
373	BEACON	3C	30/ 5	1470	4207	6100	54	10:08:15.8	01	12.1
374	BEACON	3C	30/ 1	1480	4207	6100	52	10:08:27.9	01	12.1
375	BEACON	3C	29/ 5	1490	4207	6100	54	10:08:40.0	01	12.1
376	BEACON	3C	29/ 0	1501	4207	6100	48	10:08:52.1	01	12.1
377	BEACON	3C	28/ 4	1509	4207	6100	50	10:09:04.2	01	12.1
378	BEACON	3C	27/ 7	1518	4207	6100	52	10:09:16.3	01	12.1
379	BEACON	3C	27/ 3	1526	4207	6100	52	10:09:28.3	01	12.0
380	BEACON	3C	26/ 6	1532	4207	6100	54	10:09:40.4	01	12.1
381	BEACON	3C	26/ 1	1541	4207	6100	52	10:09:52.5	01	12.1
382	BEACON	3C	25/ 3	1546	4207	6100	52	10:10:04.5	01	22.0
383	BEACON	3C	24/ 6	1551	4207	6100	50	10:10:16.6	01	12.1
384	BEACON	3C	24/ 1	1555	4207	6100	48	10:10:28.7	01	12.1
385	BEACON	3C	23/ 4	1559	4207	6100	48	10:10:40.7	01	12.0
386	BEACON	3C	22/ 7	1564	4207	6100	50	10:10:52.8	01	12.1
387	BEACON	3C	22/ 3	1578	4207	6100	50	10:11:04.9	01	12.1
388	BEACON	3C	22/ 1	1598	4207	6100	54	10:11:17.1	01	12.2
389	BEACON	3C	22/ 1	1620	4207	6100	54	10:11:29.1	01	12.0
390	BEACON	3C	22/ 3	1644	4207	6100	52	10:11:41.3	01	12.2
391	BEACON	3C	22/ 4	1668	4207	6100	54	10:11:53.4	01	12.1
392	BEACON	3C	22/ 6	1693	4207	6100	50	10:12:05.6	01	12.2
393	BEACON	3C	23/ 0	1715	4207	6100	52	10:12:17.7	01	12.1
394	BEACON	3C	23/ 2	1739	4207	6100	50	10:12:29.8	01	12.1
395	BEACON	3C	23/ 5	1762	4207	6100	52	10:12:42.0	01	12.2
396	BEACON	3C	24/ 0	1784	4207	6100	48	10:12:54.1	01	12.1
397	BEACON	3C	24/ 4	1800	4207	6100	50	10:13:06.2	01	12.1
398	BEACON	3C	25/ 2	1810	4207	6100	54	10:13:18.2	01	12.0
399	BEACON	3C	26/ 1	1810	4207	6100	50	10:13:30.3	01	12.1
400	BEACON	3C	26/ 7	1802	4207	5800	54	10:13:42.4	01	12.1
401	BEACON	3C	27/ 2	1785	4207	5900	50	10:13:54.3	01	11.9
402	BEACON	3C	27/ 4	1767	4207	6000	54	10:14:06.4	01	12.1
403	BEACON	3C	27/ 5	1749	4207	6100	54	10:14:18.3	01	11.9
404	BEACON	3C	28/ 0	1732	4207	6100	52	10:14:30.4	01	12.1
405	BEACON	3C	28/ 4	1718	4207	6100	54	10:14:42.4	01	12.0
406	BEACON	3C	29/ 2	1709	4207	6100	52	10:14:54.4	01	12.0
407	BEACON	3C	30/ 0	1699	4207	6100	54	10:15:06.5	01	12.1
408	BEACON	3C	30/ 6	1689	4207	6100	52	10:15:18.5	01	12.0
409	BEACON	3C	31/ 4	1678	4207	6100	50	10:15:30.5	01	12.0
410	BEACON	3C	32/ 2	1661	4207	6100	48	10:15:42.5	01	12.0
411	BEACON	3C	32/ 7	1652	4207	6100	54	10:15:54.5	01	12.0

413 BEACON	3C	34/ 2	1627	4207	6100	48 10:16:18.6	01	24.1
414 BEACON	3C	34/ 7	1615	4207	6100	50 10:16:30.6	01	12.0
415 BEACON	3C*	35/ 3	1601	4207	6100	44 10:16:42.6	01	12.0

CD RECORD 11/07/95 001 002 003 QJM 004 005 006 XYZ
QJM FLIGHT CHECK GRI ILS 07 NOV 95

SCAN	MSG	FLAGS	RNG	AZ	3/A	ALT	RL	TIME	PORT	DELTA
416	BEACON	3C	36/ 0	1587	4207	6100	48	10:16:54.6	01	12.0
417	BEACON	3C	36/ 4	1573	4207	6100	50	10:17:06.6	01	12.0
418	BEACON	3C	37/ 0	1562	4207	6100	48	10:17:18.6	01	12.0
419	BEACON	3C	37/ 4	1550	4207	6000	54	10:17:30.7	01	12.1
420	BEACON	3C	38/ 2	1541	4207	5700	52	10:17:42.7	01	12.0
421	BEACON	3C	39/ 0	1537	4207	5300	52	10:17:54.8	01	12.1
422	BEACON	3C	39/ 7	1538	4207	5000	48	10:18:06.8	01	12.0
423	BEACON	3C	40/ 5	1533	4207	4700	50	10:18:18.9	01	12.1
424	BEACON	3C	41/ 1	1527	4207	4400	56	10:18:30.9	01	12.0
425	BEACON	3C	41/ 2	1518	4207	4000	50	10:18:42.9	01	12.0
426	BEACON	3C	41/ 1	1512	4207	3600	54	10:18:55.0	01	12.1
427	BEACON	3C	40/ 6	1506	4207	3300	50	10:19:07.0	01	12.0
428	BEACON	3C	40/ 2	1504	4207	3300	50	10:19:19.1	01	12.1
429	BEACON	3C	39/ 6	1513	4207	3200	52	10:19:31.1	01	12.0
430	BEACON	3C	39/ 2	1516	4207	3200	50	10:19:43.3	01	12.2
431	BEACON	3C	38/ 7	1521	4207	3200	48	10:19:55.3	01	12.0
432	BEACON	3C	38/ 3	1527	4207	3200	54	10:20:07.4	01	12.1
433	BEACON	3C	38/ 0	1535	4207	3200	52	10:20:19.5	01	12.1
434	BEACON	3C	37/ 5	1542	4207	3200	52	10:20:31.5	01	12.0
435	BEACON	3C	37/ 2	1550	4207	3200	50	10:20:43.6	01	12.1
436	BEACON	3C	37/ 0	1562	4207	3200	50	10:20:55.7	01	12.1
437	BEACON	3C	36/ 5	1570	4207	3100	54	10:21:07.7	01	12.0
438	BEACON	3C	36/ 2	1580	4207	3200	54	10:21:19.8	01	12.1
439	BEACON	3C	35/ 7	1590	4207	3200	52	10:21:31.9	01	12.1
440	BEACON	3C	35/ 4	1599	4207	3200	52	10:21:44.1	01	12.2
441	BEACON	3C	35/ 1	1608	4207	3200	52	10:21:56.1	01	12.0
442	BEACON	3C	34/ 6	1616	4207	3200	50	10:22:08.2	01	12.1
443	BEACON	3C	34/ 2	1625	4207	3200	48	10:22:20.3	01	12.1
444	BEACON	3C	33/ 7	1635	4207	3200	54	10:22:32.3	01	12.0
445	BEACON	3C	33/ 3	1643	4207	3200	54	10:22:44.4	01	12.1
446	BEACON	3C	33/ 0	1651	4207	3100	50	10:22:56.5	01	12.1
447	BEACON	3C	32/ 5	1663	4207	3200	52	10:23:08.6	01	12.1
448	BEACON	3C	32/ 3	1675	4207	3100	52	10:23:20.7	01	12.1
449	BEACON	3C	32/ 5	1688	4207	3200	54	10:23:32.8	01	12.1
450	BEACON	3C	33/ 1	1698	4207	3200	52	10:23:44.9	01	12.1
451	BEACON	3C	33/ 6	1702	4207	3500	46	10:23:56.9	01	12.0
452	BEACON	3C	34/ 3	1708	4207	3600	52	10:24:09.0	01	12.1
453	BEACON	3C	35/ 0	1714	4207	3600	52	10:24:21.1	01	12.1
454	BEACON	3C	35/ 6	1719	4207	3500	50	10:24:33.1	01	12.0
455	BEACON	3C	36/ 4	1726	4207	3300	48	10:24:45.3	01	12.2
456	BEACON	3C	37/ 1	1729	4207	3300	54	10:24:57.4	01	12.1
457	BEACON	3C	37/ 6	1731	4207	3300	50	10:25:09.4	01	12.0
458	BEACON	3C	38/ 4	1737	4207	3300	54	10:25:21.5	01	12.1
459	BEACON	3C	39/ 1	1741	4207	3300	52	10:25:33.5	01	12.0
460	BEACON	3C	39/ 7	1745	4207	3300	54	10:25:45.5	01	12.0
461	BEACON	3C	40/ 4	1748	4207	3300	54	10:25:57.6	01	12.1
462	BEACON	3C	41/ 2	1748	4207	3300	54	10:26:09.7	01	12.1
463	BEACON	3C	41/ 7	1743	4207	3300	54	10:26:21.7	01	12.0
464	BEACON	3C	42/ 4	1739	4207	3300	54	10:26:33.8	01	12.1
465	BEACON	3C	43/ 1	1734	4207	3300	54	10:26:45.8	01	12.0
466	BEACON	3C	43/ 6	1727	4207	3300	52	10:26:57.8	01	12.0
467	BEACON	3C	44/ 2	1722	4207	3300	54	10:27:09.9	01	12.1
468	BEACON	3C	44/ 7	1716	4207	3300	54	10:27:21.9	01	12.0
469	BEACON	3C	45/ 4	1711	4207	3300	54	10:27:34.0	01	12.1
470	BEACON	3C	46/ 1	1708	4207	3300	52	10:27:46.0	01	12.0

471 BEACON	3C	46/ 6	1702	4207	3300	52 10:27:58.0	01	12.0
472 BEACON	3C	47/ 3	1698	4207	3300	52 10:28:10.1	01	12.1
473 BEACON	3C	48/ 1	1694	4207	3300	50 10:28:22.1	01	12.0

CD RECORD 11/07/95 001 002 003 QJM 004 005 006 XYZ
QJM FLIGHT CHECK GRI ILS 07 NOV 95

SCAN	MSG	FLAGS	RNG	AZ	3/A	ALT	RL	TIME	PORT	DELTA
474	BEACON	3C	48/	5	1690	4207	3300	52	10:28:34.2	01 12.1
475	BEACON	3C	49/	0	1682	4207	3300	50	10:28:46.2	01 12.0
476	BEACON	3C	49/	1	1675	4207	3300	50	10:28:58.2	01 12.0
477	BEACON	3C	48/	7	1665	4207	3300	46	10:29:10.3	01 12.1
478	BEACON	3C*	48/	3	1662	4207	3300	46	10:29:22.3	01 12.0
479	BEACON	3C	47/	6	1664	4207	3300	46	10:29:34.4	01 12.1
480	BEACON	3C	47/	2	1663	4207	3300	48	10:29:46.4	01 12.0
481	BEACON	3C	46/	6	1669	4207	3300	50	10:29:58.5	01 12.1
482	BEACON	3C	46/	3	1674	4207	3300	52	10:30:10.6	01 12.1
483	BEACON	3C	46/	3	1686	4207	3300	54	10:30:22.7	01 12.1
484	BEACON	3C	46/	6	1694	4207	3300	54	10:30:34.8	01 12.1
485	BEACON	3C	47/	2	1701	4207	3300	52	10:30:46.9	01 12.1
486	BEACON	3C	48/	0	1700	4207	3300	54	10:30:58.9	01 12.0
487	BEACON	3C	48/	6	1702	4207	3200	52	10:31:11.0	01 12.1
488	BEACON	3C	49/	3	1701	4207	3300	54	10:31:23.0	01 12.0
489	BEACON	3C	50/	1	1698	4207	3300	50	10:31:35.1	01 12.1
490	BEACON	3C	50/	6	1695	4207	3300	48	10:31:47.2	01 12.1
491	BEACON	3C	51/	3	1689	4207	3300	48	10:31:59.1	01 11.9
492	BEACON	3C	52/	0	1686	4207	3300	48	10:32:11.2	01 12.1
493	BEACON	3C	52/	3	1681	4207	3300	46	10:32:23.2	01 12.0
494	BEACON	3C	52/	5	1673	4207	3300	40	10:32:35.2	01 12.0
495	BEACON	3C*	52/	3	1666	4207	3300	48	10:32:47.3	01 12.1
496	BEACON	3C*	52/	0	1661	4207	3300	46	10:32:59.3	01 12.0
497	BEACON	3C	51/	3	1661	4207	3300	36	10:33:11.4	01 12.1
498	BEACON	3C	50/	7	1660	4207	3300	32	10:33:23.4	01 12.0
499	BEACON	3C	50/	2	1659	4207	3300	32	10:33:35.5	01 12.1
500	BEACON	3C	49/	6	1659	4207	3300	30	10:33:47.5	01 12.0
501	BEACON	3C	49/	2	1658	4207	3300	42	10:33:59.7	01 12.2
502	BEACON	3C	48/	6	1657	4207	3300	46	10:34:11.7	01 12.0
503	BEACON		48/	2	1655	4207	3300	44	10:34:23.8	01 12.1
504	BEACON	3C	47/	6	1654	4207	3300	42	10:34:35.8	01 12.0
505	BEACON	3C	47/	2	1651	4207	3300	40	10:34:47.8	01 12.0
506	BEACON	3C	46/	6	1650	4207	3300	38	10:34:59.9	01 12.1
507	BEACON	3C	46/	2	1649	4207	3300	48	10:35:11.9	01 12.0
508	BEACON	3C	45/	6	1651	4207	3300	38	10:35:24.0	01 12.1
509	BEACON	3C	45/	2	1651	4207	3300	36	10:35:36.1	01 12.1
510	BEACON	3C	44/	6	1650	4207	3300	42	10:35:48.1	01 12.0
511	BEACON	3C*	44/	2	1648	4207	3200	44	10:36:00.2	01 12.1
512	BEACON	3C	43/	6	1648	4207	3300	42	10:36:12.3	01 12.1
513	BEACON	3C	43/	1	1645	4207	3300	44	10:36:24.3	01 12.0
514	BEACON	3C	42/	5	1646	4207	3300	42	10:36:36.3	01 12.0
515	BEACON	3C	42/	1	1646	4207	3300	44	10:36:48.4	01 12.1
516	BEACON	3C	41/	5	1645	4207	3300	42	10:37:00.5	01 12.1
517	BEACON	3C	41/	1	1642	4207	3300	46	10:37:12.4	01 11.9
518	BEACON	3C	40/	5	1644	4207	3300	42	10:37:24.5	01 12.1
519	BEACON	3C	40/	1	1643	4207	3300	40	10:37:36.6	01 12.1
520	BEACON	3C	39/	5	1642	4207	3300	44	10:37:48.6	01 12.0
521	BEACON	3C	39/	1	1641	4207	3300	42	10:38:00.7	01 12.1
522	BEACON	3C*	38/	5	1640	4207	3300	40	10:38:12.7	01 12.0
523	BEACON	3C	38/	2	1638	4207	3300	52	10:38:24.8	01 12.1
524	BEACON	3C	37/	6	1633	4207	3300	44	10:38:36.8	01 12.0
525	BEACON	3C	37/	3	1628	4207	3300	46	10:38:48.8	01 12.0
526	BEACON	3C	37/	0	1623	4207	3300	40	10:39:00.9	01 12.1
527	BEACON	3C	36/	4	1617	4207	3300	46	10:39:12.9	01 12.0
528	BEACON	3C	36/	1	1610	4207	3300	44	10:39:25.0	01 12.1

529 BEACON	3C*	35/ 6	1606	4207	3200	48 10:39:37.0	01	12.0
530 BEACON	3C	35/ 2	1600	4207	3300	50 10:39:49.0	01	12.0
531 BEACON	3C	34/ 7	1593	4207	3300	48 10:40:01.1	01	12.1

CD RECORD 11/07/95 001 002 003 QJM 004 005 006 XYZ
QJM FLIGHT CHECK GRI ILS 07 NOV 95

SCAN	MSG	FLAGS	RNG	AZ	3/A	ALT	RL	TIME	PORT	DELTA
532	BEACON	3C	34/ 3	1587	4207	3300	52	10:40:13.2	01	12.1
533	BEACON	3C	34/ 0	1579	4207	3200	52	10:40:25.1	01	11.9
534	BEACON	3C	33/ 4	1592	4207	3100	16	10:40:37.2	01	12.1
535	BEACON	3C	33/ 0	1562	4207	3200	50	10:40:49.2	01	12.0
536	BEACON	3C	32/ 5	1554	4207	3200	52	10:41:01.3	01	12.1
537	BEACON	3C	32/ 1	1545	4207	3200	50	10:41:13.4	01	12.1
538	BEACON	3C	31/ 6	1536	4207	3200	50	10:41:25.3	01	11.9
539	BEACON	3C	31/ 2	1527	4207	3200	50	10:41:37.3	01	12.0
540	BEACON	3C	30/ 7	1518	4207	3200	48	10:41:49.4	01	12.1
541	BEACON	3C	30/ 4	1509	4207	3200	48	10:42:01.4	01	12.0
542	BEACON	3C	30/ 0	1499	4207	3200	48	10:42:13.4	01	12.0
543	BEACON	3C	29/ 6	1490	4207	3200	48	10:42:25.4	01	12.0
544	BEACON	3C	29/ 3	1479	4207	3200	48	10:42:37.5	01	12.1
545	BEACON	3C	29/ 0	1471	4207	3200	46	10:42:49.5	01	12.0
546	BEACON	3C	28/ 5	1462	4207	3200	46	10:43:01.5	01	12.0
547	BEACON	3C	28/ 2	1452	4207	3200	46	10:43:13.6	01	12.1
548	BEACON	3C	28/ 0	1444	4207	3200	40	10:43:25.6	01	12.0
549	BEACON	3C	27/ 5	1434	4207	3200	46	10:43:37.6	01	12.0
550	BEACON	3C	27/ 3	1422	4207	3200	32	10:43:49.6	01	12.0
551	BEACON	3C	27/ 0	1410	4207	3200	40	10:44:01.7	01	12.1
552	BEACON	3C	26/ 6	1401	4207	3200	40	10:44:13.7	01	12.0
553	BEACON	3C	26/ 3	1389	4207	3200	40	10:44:25.7	01	22.0
554	BEACON	3C	26/ 1	1379	4207	3200	36	10:44:37.7	01	12.0
555	BEACON	3C	25/ 7	1367	4207	3200	32	10:44:49.7	01	12.0
556	BEACON	3C	25/ 5	1353	4207	3200	36	10:45:01.8	01	12.1
558	BEACON	3C	25/ 1	1332	4207	3200	36	10:45:25.8	01	24.0
559	BEACON	3C	24/ 7	1318	4207	3200	40	10:45:37.8	01	12.0
560	BEACON	3C	24/ 5	1308	4207	3200	46	10:45:49.8	01	12.0
561	BEACON	3C	24/ 1	1299	4207	3100	48	10:46:01.9	01	12.1
562	BEACON	3C	23/ 5	1301	4207	3200	42	10:46:14.0	01	12.1
563	BEACON	3C	23/ 1	1313	4207	3200	46	10:46:26.0	01	12.0
564	BEACON	3C	22/ 7	1328	4207	3100	48	10:46:38.1	01	12.1
565	BEACON	3C	22/ 6	1349	4207	3200	50	10:46:50.2	01	12.1
566	BEACON	3C*	22/ 7	1366	4207	3200	42	10:47:02.3	01	12.1
567	BEACON	3C	23/ 0	1386	4207	3200	44	10:47:14.4	01	12.1
568	BEACON	3C	23/ 2	1405	4207	3200	50	10:47:26.6	01	12.2
569	BEACON	3C	23/ 4	1424	4207	3200	38	10:47:38.7	01	12.1
570	BEACON	3C	23/ 7	1438	4207	3200	48	10:47:50.8	01	12.1
571	BEACON	3C	24/ 3	1450	4207	3200	48	10:48:02.8	01	12.0
572	BEACON	3C	25/ 0	1462	4207	3200	48	10:48:14.9	01	12.1
573	BEACON	3C	25/ 5	1470	4207	3200	50	10:48:27.0	01	12.1
574	BEACON	3C	26/ 0	1483	4207	3200	48	10:48:39.1	01	12.1
575	BEACON	3C	26/ 1	1498	4207	3300	40	10:48:51.2	01	12.1
576	BEACON	3C	26/ 2	1516	4207	3200	50	10:49:03.3	01	12.1
577	BEACON	3C	26/ 2	1533	4207	3200	52	10:49:15.4	01	12.1
578	BEACON	3C*	26/ 0	1550	4207	3200	52	10:49:27.6	01	12.2
579	BEACON	3C	25/ 7	1563	4207	3200	52	10:49:39.6	01	12.0
580	BEACON	3C	25/ 5	1579	4207	3200	50	10:49:51.7	01	12.1
581	BEACON	3C	25/ 2	1591	4207	3200	50	10:50:03.8	01	12.1
582	BEACON	3C	24/ 7	1606	4207	3200	52	10:50:16.0	01	12.2
583	BEACON	3C	24/ 3	1611	4207	3100	40	10:50:28.0	01	12.0
584	BEACON	3C	23/ 7	1612	4207	3200	52	10:50:40.1	01	12.1
585	BEACON	3C	23/ 4	1604	4207	3200	52	10:50:52.2	01	12.1
586	BEACON	3C	23/ 3	1587	4207	3200	48	10:51:04.2	01	12.0
587	BEACON	3C	23/ 6	1573	4207	3200	50	10:51:16.2	01	12.0

588 BEACON	3C	24/ 2	1560	4207	3200	52 10:51:28.1	01	11.9
589 BEACON	3C	24/ 6	1552	4207	3200	50 10:51:40.1	01	12.0
590 BEACON	3C	25/ 3	1547	4207	3200	44 10:51:52.2	01	12.1

CD RECORD 11/07/95 001 002 003 QJM 004 005 006 XYZ
 QJM FLIGHT CHECK GRI ILS 07 NOV 95

SCAN	MSG	FLAGS	RNG	AZ	3/A	ALT	RL	TIME	PORT	DELTA
591	BEACON	3C	26/ 0	1539	4207	3200	52	10:52:04.2	01	12.0
592	BEACON	3C	26/ 5	1531	4207	3200	46	10:52:16.2	01	12.0
593	BEACON	3C	27/ 2	1527	4207	3200	54	10:52:28.3	01	12.1
594	BEACON	3C	27/ 7	1521	4207	3200	54	10:52:40.4	01	12.1
595	BEACON	3C	28/ 3	1511	4207	3200	50	10:52:52.4	01	12.0
596	BEACON	3C	29/ 0	1504	4207	3200	50	10:53:04.4	01	12.0
597	BEACON	3C	29/ 4	1495	4207	3200	50	10:53:16.4	01	12.0
598	BEACON	3C*	30/ 0	1485	4207	3200	50	10:53:28.5	01	12.1
599	BEACON	3C	30/ 3	1476	4207	3100	50	10:53:40.6	01	12.1
600	BEACON	3C*	30/ 7	1465	4207	3100	50	10:53:52.5	01	11.9
601	BEACON	3C	31/ 2	1456	4207	3200	52	10:54:04.6	01	12.1

QJM 01, 02, 03

RECORDED:
11/07/95

PLOTCD

VERSION 69
(c)1995 PDS

FILENAME: QJM1107A.MX6

SCANS: 1 THROUGH 1170

Mode 3/A Code 7055

RdrBcn ☐ Disabled

Radar ☐ Disabled

Beacon ☐ Enabled

WX ☒ Disabled

Altitude = -1000 to 100000 ft.

RdrBcn count = 0

Beacon count = 359

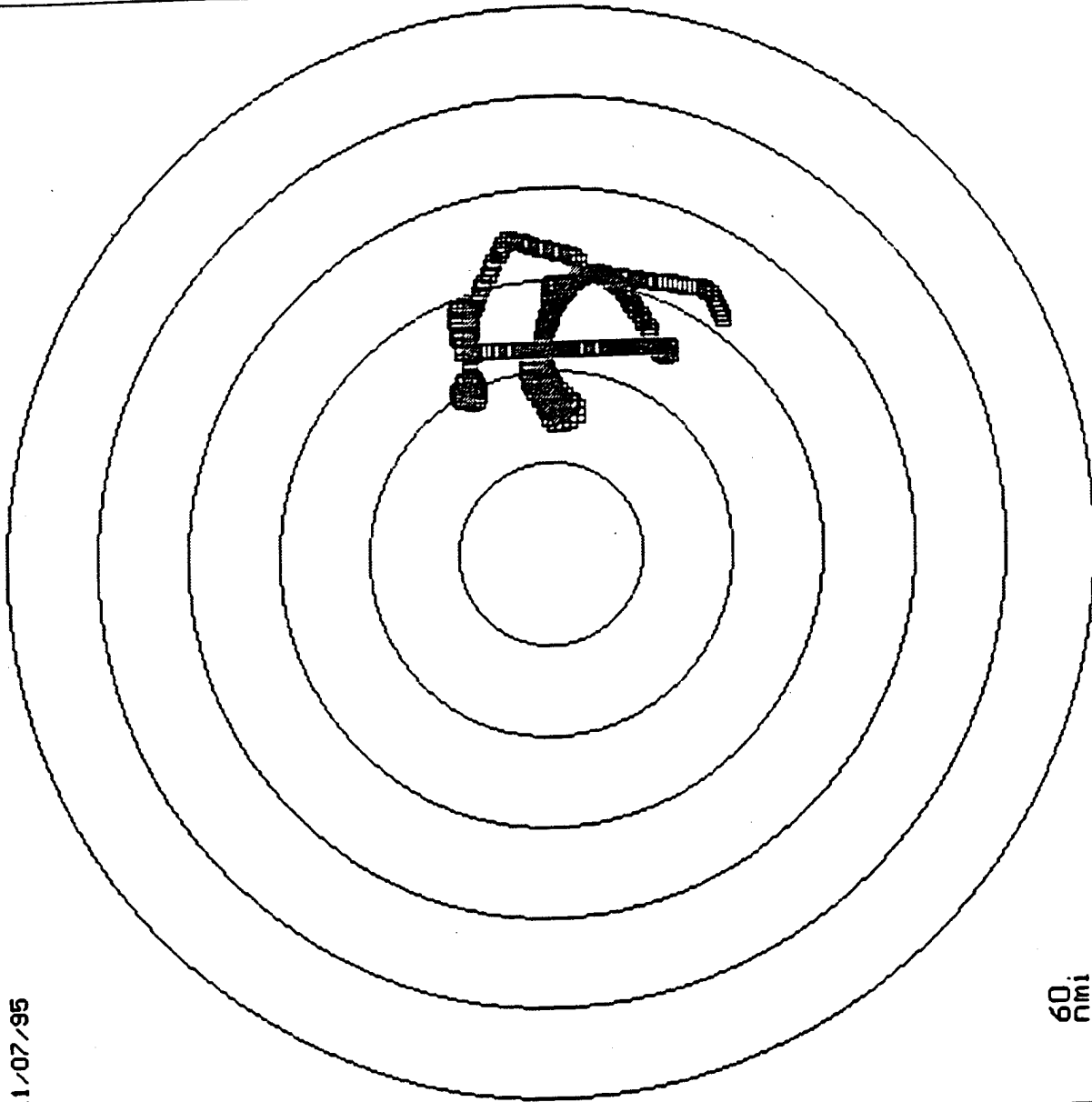
Radar count = 0

WX count = 0

Radar = 0.0 %

Reinforced

- F1 FILE Alt F1 HELP
- F2 ZOOM Alt F2 NOTE
- F3 TARGET Alt F3 ID
- F4 SCANS Alt F4 SETUP
- F5 RANGE Alt F5 STATS
- F9 PRINT Alt F9 STEP
- F10 QUIT



60
nmi

CD RECORD 11/07/95 001 002 003 QJM 004 005 006 XYZ
QJM FLIGHT CHECK GRI ILS 07 NOV 95

SCAN	MSG	FLAGS	RNG	AZ	3/A	ALT	RL	TIME	PORT	DELTA
602	BEACON	3C	31/ 5	1444	7055	3200	50	10:54:16.6	01	0.0
603	BEACON	3C	32/ 0	1435	7055	3200	48	10:54:28.6	01	12.0
604	BEACON	3C	32/ 2	1423	7055	3200	52	10:54:40.6	01	12.0
605	BEACON	3C	32/ 5	1414	7055	3200	52	10:54:52.6	01	12.0
606	BEACON	3C	32/ 7	1402	7055	3200	52	10:55:04.7	01	12.1
607	BEACON	3C	33/ 1	1392	7055	3200	52	10:55:16.7	01	12.0
608	BEACON	3C	33/ 2	1382	7055	3200	50	10:55:28.7	01	12.0
609	BEACON	3C	33/ 2	1372	7055	3200	52	10:55:40.8	01	12.1
610	BEACON	3C	33/ 1	1362	7055	3200	52	10:55:52.7	01	11.9
611	BEACON	3C	32/ 7	1351	7055	3200	52	10:56:04.8	01	12.1
612	BEACON	3C	32/ 6	1342	7055	3200	52	10:56:16.8	01	12.0
613	BEACON	3C	32/ 4	1333	7055	3200	52	10:56:28.8	01	12.0
614	BEACON	3C	32/ 3	1323	7055	3200	52	10:56:40.9	01	12.1
615	BEACON	3C	32/ 2	1310	7055	3000	52	10:56:52.9	01	12.0
616	BEACON	3C	32/ 1	1301	7055	2900	54	10:57:04.9	01	12.0
617	BEACON	3C	31/ 7	1290	7055	2800	52	10:57:16.9	01	12.0
618	BEACON	3C*	31/ 6	1276	7055	2800	50	10:57:28.9	01	12.0
619	BEACON	3C	31/ 5	1267	7055	2800	50	10:57:40.9	01	12.0
620	BEACON	3C	31/ 4	1254	7055	2800	50	10:57:53.0	01	12.1
621	BEACON	3C	31/ 3	1244	7055	2800	48	10:58:05.0	01	12.0
622	BEACON	3C	31/ 2	1232	7055	2800	52	10:58:17.0	01	12.0
623	BEACON	3C	31/ 2	1221	7055	2800	50	10:58:29.0	01	12.0
624	BEACON	3C	31/ 1	1209	7055	2800	46	10:58:41.0	01	12.0
625	BEACON	3C	31/ 0	1199	7055	2800	50	10:58:53.1	01	12.1
626	BEACON	3C*	31/ 0	1188	7055	2700	48	10:59:05.1	01	12.0
627	BEACON	3C	30/ 7	1175	7055	2800	50	10:59:17.1	01	12.0
628	BEACON	3C	30/ 7	1164	7055	2800	48	10:59:29.1	01	12.0
629	BEACON	3C	30/ 7	1153	7055	2800	48	10:59:41.1	01	12.0
630	BEACON	3C	30/ 7	1140	7055	2800	48	10:59:53.1	01	12.0
631	BEACON	3C	30/ 7	1128	7055	2800	52	11:00:05.1	01	12.0
632	BEACON	3C	30/ 7	1118	7055	2800	56	11:00:17.1	01	12.0
633	BEACON	3C*	30/ 6	1106	7055	2800	54	11:00:29.1	01	12.0
634	BEACON	3C	30/ 4	1096	7055	2800	50	11:00:41.1	01	12.0
635	BEACON	3C	30/ 1	1087	7055	2800	50	11:00:53.1	01	12.0
636	BEACON	3C	29/ 6	1080	7055	2700	52	11:01:05.2	01	12.1
637	BEACON	3C	29/ 3	1071	7055	2800	50	11:01:17.2	01	12.0
638	BEACON	3C	29/ 0	1062	7055	2800	52	11:01:29.2	01	12.0
639	BEACON	3C	28/ 4	1056	7055	2800	48	11:01:41.3	01	12.1
640	BEACON	3C	28/ 0	1048	7055	2700	42	11:01:53.3	01	12.0
641	BEACON	3C	27/ 4	1040	7055	2800	46	11:02:05.3	01	12.0
642	BEACON	3C	27/ 0	1034	7055	2800	36	11:02:17.3	01	12.0
643	BEACON	3C	26/ 4	1029	7055	2800	36	11:02:29.4	01	12.1
644	BEACON	3C	26/ 0	1026	7055	2800	40	11:02:41.5	01	12.1
645	BEACON	3C	25/ 4	1018	7055	2800	20	11:02:53.5	01	12.0
646	BEACON	3C	25/ 0	1017	7055	2800	32	11:03:05.5	01	12.0
647	BEACON	3C	24/ 3	1013	7055	2800	32	11:03:17.5	01	12.0
648	BEACON	3C	23/ 7	1008	7055	2700	38	11:03:29.6	01	12.1
649	BEACON	3C	23/ 3	1007	7055	2800	36	11:03:41.7	01	12.1
650	BEACON	3C	22/ 6	1002	7055	2800	38	11:03:53.7	01	12.0
651	BEACON	3C	22/ 2	1003	7055	2700	32	11:04:05.7	01	12.0
652	BEACON	3C*	21/ 6	1002	7055	2800	42	11:04:17.8	01	12.1
653	BEACON	3C	21/ 1	1004	7055	2800	46	11:04:29.9	01	12.1
654	BEACON	3C	20/ 5	1006	7055	2700	50	11:04:41.9	01	12.0
655	BEACON	3C	20/ 1	1012	7055	2800	46	11:04:54.0	01	12.1
656	BEACON	3C	19/ 4	1014	7055	2800	46	11:05:06.1	01	12.1

657	BEACON	3C	19/ 0	1020	7055	2800	46 11:05:18.1	01	12.0
658	BEACON	3C	18/ 4	1030	7055	2800	30 11:05:30.2	01	12.1
659	BEACON	3C	18/ 0	1036	7055	2800	46 11:05:42.3	01	12.1

CD RECORD 11/07/95 001 002 003 QJM 004 005 006 XYZ
 QJM FLIGHT CHECK GRI ILS 07 NOV 95

SCAN	MSG	FLAGS	RNG	AZ	3/A	ALT	RL	TIME	PORT	DELTA
660	BEACON	3C	17/ 4	1043	7055	2700	42	11:05:54.4	01	12.1
661	BEACON	3C	17/ 0	1057	7055	2800	50	11:06:06.5	01	12.1
662	BEACON	3C	16/ 4	1072	7055	2800	52	11:06:18.6	01	12.1
663	BEACON	3C	16/ 0	1082	7055	2800	52	11:06:30.7	01	12.1
664	BEACON	3C	15/ 4	1078	7055	2800	46	11:06:42.7	01	12.0
665	BEACON	3C	15/ 2	1066	7055	2800	52	11:06:54.7	01	12.0
666	BEACON	3C	15/ 2	1047	7055	2800	54	11:07:06.7	01	12.0
667	BEACON	3C	15/ 5	1032	7055	2700	54	11:07:18.8	01	12.1
668	BEACON	3C	16/ 1	1028	7055	2800	52	11:07:30.8	01	12.0
669	BEACON	3C	16/ 6	1030	7055	2800	54	11:07:42.9	01	12.1
670	BEACON	3C	17/ 3	1029	7055	2800	52	11:07:54.9	01	12.0
671	BEACON	3C	17/ 7	1028	7055	2800	36	11:08:06.9	01	12.0
672	BEACON	3C	18/ 3	1022	7055	2800	42	11:08:19.0	01	12.1
673	BEACON	3C	19/ 0	1017	7055	2800	46	11:08:31.0	01	12.0
674	BEACON	3C	19/ 4	1014	7055	2800	52	11:08:43.1	01	12.1
675	BEACON	3C	20/ 1	1010	7055	2800	50	11:08:55.1	01	12.0
676	BEACON	3C	20/ 5	1008	7055	2800	50	11:09:07.1	01	12.0
677	BEACON	3C	21/ 2	1005	7055	2800	50	11:09:19.2	01	12.1
678	BEACON	3C	21/ 7	1002	7055	2800	46	11:09:31.3	01	12.1
679	BEACON	3C	22/ 3	1002	7055	2800	48	11:09:43.3	01	12.0
680	BEACON	3C	23/ 0	1005	7055	2800	46	11:09:55.4	01	12.1
681	BEACON	3C*	23/ 5	1006	7055	2700	44	11:10:07.5	01	12.1
682	BEACON	3C	24/ 1	1012	7055	2800	40	11:10:19.5	01	12.0
683	BEACON	3C	24/ 6	1013	7055	2800	30	11:10:31.6	01	12.1
684	BEACON	3C	25/ 3	1016	7055	2800	36	11:10:43.6	01	12.0
685	BEACON	3C	26/ 0	1025	7055	2800	46	11:10:55.7	01	12.1
686	BEACON	3C	26/ 4	1029	7055	2800	50	11:11:07.8	01	12.1
687	BEACON	3C	27/ 1	1038	7055	2800	50	11:11:19.8	01	12.0
688	BEACON	3C	27/ 5	1044	7055	2700	52	11:11:31.9	01	12.1
689	BEACON	3C	28/ 2	1053	7055	2800	54	11:11:44.0	01	12.1
690	BEACON	3C	28/ 6	1057	7055	2800	50	11:11:56.1	01	12.1
691	BEACON	3C	29/ 3	1055	7055	2800	52	11:12:08.1	01	12.0
692	BEACON	3C	29/ 5	1044	7055	2800	50	11:12:20.2	01	12.1
693	BEACON	3C	29/ 6	1037	7055	2900	54	11:12:32.3	01	12.1
694	BEACON	3C	29/ 3	1027	7055	2800	52	11:12:44.3	01	12.0
695	BEACON	3C	29/ 0	1024	7055	2800	46	11:12:56.3	01	12.0
696	BEACON	3C	28/ 4	1022	7055	2800	40	11:13:08.4	01	12.1
697	BEACON	3C	28/ 0	1026	7055	2800	38	11:13:20.4	01	12.0
698	BEACON	3C	27/ 3	1026	7055	2800	36	11:13:32.5	01	12.1
699	BEACON	3C	26/ 7	1027	7055	2800	38	11:13:44.5	01	12.0
700	BEACON	3C	26/ 3	1028	7055	2800	28	11:13:56.6	01	12.1
701	BEACON	3C	25/ 7	1029	7055	2800	30	11:14:08.7	01	12.1
702	BEACON	3C	25/ 3	1027	7055	2800	24	11:14:20.7	01	12.0
703	BEACON	3C	25/ 0	1018	7055	2800	26	11:14:32.7	01	12.0
705	BEACON	3C	24/ 0	1013	7055	2800	40	11:14:56.8	01	24.1
706	BEACON	3C	23/ 4	1007	7055	2800	48	11:15:08.9	01	12.1
707	BEACON	3C	23/ 0	1005	7055	2800	44	11:15:20.9	01	12.0
708	BEACON	3C*	22/ 4	1003	7055	2800	42	11:15:32.9	01	12.0
709	BEACON	3C	22/ 0	1003	7055	2800	48	11:15:45.0	01	12.1
710	BEACON	3C	21/ 4	1002	7055	2700	48	11:15:57.0	01	12.0
711	BEACON	3C	20/ 7	1005	7055	2800	50	11:16:09.1	01	12.1
712	BEACON	3C	20/ 3	1009	7055	2800	52	11:16:21.2	01	12.1
713	BEACON	3C	19/ 7	1010	7055	2800	48	11:16:33.2	01	12.0
714	BEACON	3C	19/ 4	1002	7055	3200	52	11:16:45.2	01	12.0
715	BEACON	3C	19/ 2	987	7055	3800	52	11:16:57.2	01	12.0

716 BEACON	3C	19/ 0	975	7055	4700	52 11:17:09.2	01	12.0
717 BEACON	3C	18/ 6	965	7055	5300	48 11:17:21.3	01	12.1
718 BEACON	3C	18/ 3	961	7055	5700	50 11:17:33.3	01	12.0

CD RECORD 11/07/95 001 002 003 QJM 004 005 006 XYZ
QJM FLIGHT CHECK GRI ILS 07 NOV 95

SCAN	MSG	FLAGS	RNG	AZ	3/A	ALT	RL	TIME	PORT	DELTA
719	BEACON	3C	17/ 7	967	7055	6000	54	11:17:45.4	01	12.1
720	BEACON	3C	17/ 3	979	7055	6000	52	11:17:57.5	01	12.1
721	BEACON	3C	16/ 7	987	7055	6100	46	11:18:09.5	01	12.0
722	BEACON	3C	16/ 1	997	7055	6100	46	11:18:21.6	01	12.1
723	BEACON	3C	15/ 4	1008	7055	6100	52	11:18:33.7	01	12.1
724	BEACON	3C	14/ 7	1024	7055	6100	50	11:18:45.9	01	12.2
725	BEACON	3C	14/ 3	1052	7055	6100	52	11:18:58.0	01	12.1
726	BEACON	3C	14/ 3	1089	7055	6100	54	11:19:10.1	01	12.1
727	BEACON	3C	14/ 5	1125	7055	6100	56	11:19:22.3	01	12.2
728	BEACON	3C	15/ 2	1147	7055	6200	54	11:19:34.4	01	12.1
729	BEACON	3C*	16/ 0	1144	7055	6200	50	11:19:46.4	01	12.0
730	BEACON	3C	16/ 4	1124	7055	6100	54	11:19:58.5	01	12.1
731	BEACON	3C	16/ 7	1104	7055	6200	50	11:20:10.4	01	11.9
732	BEACON	3C	17/ 2	1083	7055	6200	52	11:20:22.4	01	12.0
733	BEACON	3C	17/ 6	1064	7055	6100	56	11:20:34.5	01	22.1
734	BEACON	3C	18/ 2	1048	7055	6100	52	11:20:46.4	01	11.9
735	BEACON	3C	18/ 7	1033	7055	6100	52	11:20:58.4	01	12.0
736	BEACON	3C	19/ 4	1022	7055	6100	52	11:21:10.4	01	12.0
737	BEACON	3C	20/ 2	1013	7055	6100	50	11:21:22.5	01	12.1
738	BEACON	3C	21/ 1	1009	7055	6100	54	11:21:34.5	01	12.0
739	BEACON	3C	21/ 7	1007	7055	6100	52	11:21:46.6	01	12.1
740	BEACON	3C	22/ 6	1007	7055	6100	50	11:21:58.6	01	12.0
741	BEACON	3C	23/ 5	1009	7055	6100	50	11:22:10.6	01	12.0
742	BEACON	3C	24/ 4	1014	7055	6100	50	11:22:22.7	01	12.1
743	BEACON	3C	25/ 3	1021	7055	6100	52	11:22:34.8	01	12.1
744	BEACON	3C	26/ 2	1029	7055	6200	50	11:22:46.9	01	12.1
745	BEACON	3C	27/ 0	1040	7055	6100	54	11:22:59.0	01	12.1
746	BEACON	3C	27/ 7	1049	7055	6100	50	11:23:11.0	01	12.0
747	BEACON	3C	28/ 4	1060	7055	6100	54	11:23:23.2	01	12.2
748	BEACON	3C	29/ 2	1071	7055	6100	54	11:23:35.2	01	12.0
749	BEACON	3C	29/ 7	1083	7055	6100	54	11:23:47.3	01	12.1
750	BEACON	3C	30/ 4	1092	7055	6100	52	11:23:59.4	01	12.1
751	BEACON	3C	31/ 2	1094	7055	6100	52	11:24:11.4	01	12.0
752	BEACON	3C	31/ 7	1091	7055	6100	52	11:24:23.5	02	22.1
753	BEACON	3C	32/ 3	1078	7055	6100	48	11:24:35.5	01	12.0
754	BEACON	3C	32/ 5	1067	7055	6100	52	11:24:47.5	01	12.0
755	BEACON	3C	32/ 7	1052	7055	6100	54	11:24:59.5	01	12.0
756	BEACON	3C	33/ 0	1040	7055	6100	50	11:25:11.5	01	12.0
757	BEACON	3C	33/ 1	1028	7055	6100	52	11:25:23.6	01	12.1
758	BEACON	3C	33/ 3	1015	7055	6100	48	11:25:35.5	01	11.9
759	BEACON	3C	33/ 4	1003	7055	6100	48	11:25:47.6	01	12.1
760	BEACON	3C	33/ 6	989	7055	6100	50	11:25:59.6	01	12.0
761	BEACON	3C	34/ 0	980	7055	6100	54	11:26:11.6	01	12.0
762	BEACON	3C	34/ 2	968	7055	6100	50	11:26:23.7	01	12.1
763	BEACON	3C	34/ 4	955	7055	6100	52	11:26:35.6	01	11.9
764	BEACON	3C	34/ 5	944	7055	6100	48	11:26:47.7	01	12.1
765	BEACON	3C	34/ 3	932	7055	6000	50	11:26:59.7	01	12.0
766	BEACON	3C	33/ 6	927	7055	6000	38	11:27:11.7	01	12.0
767	BEACON	3C*	33/ 1	916	7055	6000	50	11:27:23.8	01	12.1
768	BEACON	3C	32/ 4	907	7055	6000	50	11:27:35.8	01	12.0
769	BEACON	3C*	32/ 0	897	7055	6000	46	11:27:47.8	01	12.0
770	BEACON	3C	31/ 3	887	7055	6000	46	11:27:59.9	01	12.1
771	BEACON	3C	30/ 6	877	7055	6000	50	11:28:11.9	01	12.0
772	BEACON	3C	30/ 1	866	7055	6000	48	11:28:23.9	01	12.0
773	BEACON	3C	29/ 4	855	7055	6000	50	11:28:35.9	01	12.0

774 BEACON	3C	28/ 7	846	7055	6000	48 11:28:47.9	01	12.0
775 BEACON	3C	28/ 2	837	7055	6000	50 11:29:00.0	01	12.1
776 BEACON	3C	27/ 5	825	7055	6000	48 11:29:12.0	01	12.0

CD RECORD 11/07/95 001 002 003 QJM 004 005 006 XYZ
QJM FLIGHT CHECK GRI ILS 07 NOV 95

SCAN	MSG	FLAGS	RNG	AZ	3/A	ALT	RL	TIME	PORT	DELTA
777	BEACON	3C	26/ 7	816	7055	6000	46	11:29:24.1	01	12.1
778	BEACON	3C*	26/ 2	810	7055	6000	48	11:29:36.2	01	12.1
779	BEACON	3C	25/ 4	799	7055	6000	44	11:29:48.1	01	11.9
780	BEACON	3C	24/ 7	792	7055	6000	52	11:30:00.1	01	12.0
781	BEACON	3C	24/ 1	784	7055	6000	52	11:30:12.1	01	12.0
782	BEACON	3C	23/ 3	777	7055	6000	52	11:30:24.2	01	12.1
783	BEACON	3C	22/ 5	771	7055	6000	52	11:30:36.2	01	12.0
784	BEACON	3C	21/ 7	763	7055	6000	50	11:30:48.2	01	12.0
785	BEACON	3C	21/ 1	757	7055	6000	50	11:31:00.3	01	12.1
786	BEACON	3C	20/ 3	751	7055	6000	52	11:31:12.3	01	12.0
787	BEACON	3C	19/ 6	745	7055	6000	54	11:31:24.4	01	12.1
788	BEACON	3C	19/ 3	731	7055	5800	52	11:31:36.4	01	12.0
789	BEACON	3C	19/ 2	713	7055	5600	52	11:31:48.4	01	12.0
790	BEACON	3C	19/ 3	697	7055	5400	56	11:32:00.4	01	12.0
791	BEACON	3C	19/ 6	687	7055	5300	50	11:32:12.4	01	12.0
792	BEACON	3C*	20/ 2	692	7055	5100	52	11:32:24.5	01	12.1
793	BEACON	3C	20/ 5	703	7055	4600	54	11:32:36.6	01	12.1
794	BEACON	3C	21/ 1	718	7055	3900	54	11:32:48.7	01	12.1
795	BEACON	3C	21/ 1	736	7055	3500	50	11:33:00.8	01	12.1
796	BEACON	3C	20/ 6	751	7055	3100	48	11:33:12.9	01	12.1
797	BEACON	3C	20/ 2	750	7055	2900	52	11:33:24.9	01	12.0
798	BEACON	3C	20/ 0	736	7055	2900	50	11:33:37.0	01	12.1
799	BEACON	3C	19/ 6	722	7055	2900	54	11:33:49.0	01	12.0
800	BEACON	3C	19/ 2	716	7055	2900	48	11:34:01.0	01	12.0
801	BEACON	3C	18/ 6	723	7055	2800	54	11:34:13.1	01	12.1
802	BEACON	3C	18/ 5	743	7055	2800	52	11:34:25.2	01	12.1
803	BEACON	3C	19/ 0	757	7055	2500	48	11:34:37.4	01	12.2
804	BEACON	3C	19/ 4	761	7055	2700	50	11:34:49.4	01	12.0
805	BEACON	3C	20/ 1	761	7055	2800	54	11:35:01.4	01	12.0
806	BEACON	3C	20/ 6	759	7055	2800	52	11:35:13.5	01	12.1
807	BEACON	3C	21/ 4	758	7055	2800	50	11:35:25.5	01	12.0
808	BEACON	3C	22/ 1	761	7055	2800	46	11:35:37.6	01	12.1
809	BEACON	3C	22/ 6	768	7055	2800	46	11:35:49.6	01	12.0
810	BEACON	3C	23/ 3	775	7055	2800	52	11:36:01.8	01	12.2
811	BEACON	3C	24/ 1	783	7055	2700	52	11:36:13.8	01	12.0
812	BEACON	3C	24/ 6	792	7055	2800	50	11:36:25.9	01	12.1
813	BEACON	3C	25/ 3	801	7055	2800	52	11:36:38.0	01	12.1
814	BEACON	3C	26/ 0	808	7055	2800	50	11:36:50.1	01	12.1
815	BEACON	3C	26/ 5	817	7055	2800	52	11:37:02.2	01	12.1
816	BEACON	3C	27/ 2	824	7055	2800	54	11:37:14.2	01	12.0
817	BEACON	3C	27/ 7	828	7055	2800	52	11:37:26.3	01	12.1
818	BEACON	3C	28/ 4	824	7055	2700	54	11:37:38.4	01	12.1
819	BEACON	3C	28/ 7	814	7055	2700	52	11:37:50.4	01	12.0
820	BEACON	3C	29/ 0	802	7055	2800	50	11:38:02.4	01	12.0
821	BEACON	3C	28/ 6	792	7055	2800	56	11:38:14.4	01	12.0
822	BEACON	3C	28/ 2	785	7055	2700	52	11:38:26.5	01	12.1
823	BEACON	3C	27/ 6	781	7055	2800	54	11:38:38.5	01	12.0
824	BEACON	3C*	27/ 1	779	7055	2800	50	11:38:50.5	01	12.0
825	BEACON	3C	26/ 5	775	7055	2800	50	11:39:02.6	01	12.1
826	BEACON	3C	26/ 0	771	7055	2800	52	11:39:14.7	01	12.1
827	BEACON	3C	25/ 4	770	7055	2800	50	11:39:26.7	01	12.0
828	BEACON	3C	24/ 7	767	7055	2700	48	11:39:38.8	01	12.1
829	BEACON	3C	24/ 2	765	7055	2800	50	11:39:50.8	01	12.0
830	BEACON	3C	23/ 6	778	7055	2600	54	11:40:02.9	01	12.1
831	BEACON	3C	23/ 5	794	7055	2900	38	11:40:15.0	01	12.1

832 BEACON	3C	23/ 4	813	7055	2900	42 11:40:27.1	01	12.1
833 BEACON	3C	23/ 2	832	7055	2800	42 11:40:39.2	01	12.1
834 BEACON	3C	23/ 1	855	7055	2800	34 11:40:51.3	01	12.1

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QJM FLIGHT CHECK GRI ILS 07 NOV 95

SCAN	MSG	FLAGS	RNG	AZ	3/A	ALT	RL	TIME	PORT	DELTA
835	BEACON	3C	22/ 7	870	7055	2800	44	11:41:03.4	01	12.1
836	BEACON	3C	22/ 6	889	7055	2800	46	11:41:15.5	01	12.1
837	BEACON	3C	22/ 5	908	7055	2800	46	11:41:27.6	01	12.1
838	BEACON	3C	22/ 4	928	7055	2800	48	11:41:39.8	01	12.2
839	BEACON	3C	22/ 4	948	7055	2800	54	11:41:51.9	01	12.1
840	BEACON	3C	22/ 3	964	7055	2800	52	11:42:04.0	01	12.1
841	BEACON	3C	22/ 3	984	7055	2800	54	11:42:16.1	01	12.1
842	BEACON	3C	22/ 3	1003	7055	2700	52	11:42:28.2	01	12.1
843	BEACON	3C	22/ 2	1022	7055	2800	50	11:42:40.3	01	12.1
844	BEACON	3C	22/ 3	1042	7055	2800	50	11:42:52.4	01	12.1
845	BEACON	3C	22/ 3	1060	7055	2800	52	11:43:04.5	01	12.1
846	BEACON	3C	22/ 3	1079	7055	2800	50	11:43:16.6	01	12.1
847	BEACON	3C	22/ 4	1098	7055	2800	50	11:43:28.8	01	12.2
848	BEACON	3C	22/ 4	1117	7055	2800	48	11:43:40.9	01	12.1
849	BEACON	3C	22/ 5	1137	7055	2800	46	11:43:53.0	01	12.1
850	BEACON	3C	22/ 6	1153	7055	2800	44	11:44:05.1	01	12.1
851	BEACON	3C	22/ 7	1172	7055	2700	52	11:44:17.2	01	12.1
852	BEACON	3C	23/ 0	1189	7055	2800	42	11:44:29.3	01	12.1
853	BEACON	3C	23/ 2	1207	7055	2800	48	11:44:41.4	01	12.1
854	BEACON	3C	23/ 3	1222	7055	2800	48	11:44:53.5	01	12.1
855	BEACON	3C	23/ 5	1240	7055	2800	50	11:45:05.6	01	12.1
856	BEACON	3C	23/ 7	1256	7055	2800	50	11:45:17.8	01	12.2
857	BEACON	3C	24/ 1	1273	7055	2800	54	11:45:29.8	01	12.0
858	BEACON	3C	24/ 3	1290	7055	2700	50	11:45:41.9	01	12.1
859	BEACON	3C	24/ 5	1305	7055	2800	50	11:45:54.1	01	12.2
860	BEACON	3C	25/ 2	1312	7055	2800	50	11:46:06.1	01	12.0
861	BEACON	3C	25/ 7	1310	7055	2800	50	11:46:18.2	01	12.1
862	BEACON	3C	26/ 2	1304	7055	2700	54	11:46:30.2	01	12.0
863	BEACON	3C	26/ 5	1293	7055	2700	52	11:46:42.3	01	12.1
864	BEACON	3C	27/ 0	1281	7055	2800	50	11:46:54.2	01	11.9
865	BEACON	3C	27/ 3	1273	7055	2800	50	11:47:06.3	01	12.1
866	BEACON	3C*	27/ 6	1261	7055	2700	50	11:47:18.3	01	22.0
867	BEACON	3C*	28/ 0	1249	7055	2800	48	11:47:30.3	01	12.0
868	BEACON	3C	28/ 3	1240	7055	2800	48	11:47:42.4	01	12.1
869	BEACON	3C	28/ 6	1230	7055	2800	46	11:47:54.4	01	12.0
870	BEACON	3C	29/ 0	1220	7055	2700	54	11:48:06.4	01	12.0
871	BEACON	3C	29/ 3	1212	7055	2700	48	11:48:18.4	01	12.0
872	BEACON	3C	29/ 6	1201	7055	2800	50	11:48:30.5	01	12.1
873	BEACON	3C	30/ 0	1192	7055	2800	52	11:48:42.5	01	12.0
874	BEACON	3C	30/ 2	1183	7055	2700	52	11:48:54.5	01	12.0
875	BEACON	3C	30/ 4	1172	7055	2800	52	11:49:06.6	01	12.1
876	BEACON	3C	30/ 6	1162	7055	2800	52	11:49:18.6	01	12.0
877	BEACON	3C*	30/ 7	1152	7055	2800	54	11:49:30.6	01	12.0
878	BEACON	3C	31/ 0	1143	7055	2800	54	11:49:42.6	01	12.0
879	BEACON	3C	31/ 0	1131	7055	2800	52	11:49:54.6	01	12.0
880	BEACON	3C	30/ 7	1122	7055	2800	50	11:50:06.7	01	12.1
881	BEACON	3C	30/ 6	1114	7055	2800	50	11:50:18.7	01	12.0
882	BEACON	3C	30/ 4	1101	7055	2800	52	11:50:30.7	01	12.0
883	BEACON	3C	30/ 2	1092	7055	2800	48	11:50:42.7	01	12.0
884	BEACON	3C	29/ 7	1085	7055	2800	52	11:50:54.8	01	12.1
885	BEACON	3C*	29/ 4	1072	7055	2800	50	11:51:06.8	01	12.0
886	BEACON	3C	29/ 0	1065	7055	2800	52	11:51:18.8	01	12.0
887	BEACON	3C	28/ 5	1059	7055	2800	52	11:51:30.9	01	12.1
888	BEACON	3C	28/ 1	1050	7055	2800	52	11:51:42.9	01	12.0
889	BEACON	3C	27/ 6	1042	7055	2800	38	11:51:54.9	01	12.0

890 BEACON	3C	27/ 2	1038	7055	2800	42	11:52:07.0	01	12.1
891 BEACON	3C	26/ 6	1031	7055	2700	28	11:52:19.0	01	12.0
892 BEACON	3C	26/ 2	1025	7055	2800	48	11:52:31.1	01	12.1

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QJM FLIGHT CHECK GRI ILS 07 NOV 95

SCAN	MSG	FLAGS	RNG	AZ	3/A	ALT	RL	TIME	PORT	DELTA
893	BEACON	3C	25/ 6	1020	7055	2800	30	11:52:43.1	01	12.0
894	BEACON	3C	25/ 2	1015	7055	2800	38	11:52:55.1	01	12.0
895	BEACON	3C	24/ 7	1012	7055	2800	28	11:53:07.2	01	12.1
896	BEACON	3C	24/ 3	1010	7055	2800	42	11:53:19.2	01	12.0
897	BEACON	3C	23/ 7	1006	7055	2800	42	11:53:31.3	01	12.1
898	BEACON	3C	23/ 3	1004	7055	2800	32	11:53:43.3	01	12.0
899	BEACON	3C	22/ 7	1004	7055	2800	42	11:53:55.4	01	12.1
900	BEACON	3C	22/ 3	1002	7055	2800	42	11:54:07.4	01	12.0
901	BEACON	3C	21/ 7	1004	7055	2800	40	11:54:19.5	01	12.1
902	BEACON	3C	21/ 3	1003	7055	2800	40	11:54:31.5	01	12.0
903	BEACON	3C*	20/ 7	1004	7055	2800	50	11:54:43.6	01	12.1
904	BEACON	3C	20/ 4	1009	7055	2800	52	11:54:55.7	01	12.1
905	BEACON	3C	20/ 0	1011	7055	2700	50	11:55:07.7	01	12.0
906	BEACON	3C	19/ 4	1015	7055	2800	52	11:55:19.8	01	12.1
907	BEACON	3C	19/ 0	1018	7055	2800	48	11:55:31.9	01	12.1
908	BEACON	3C	18/ 4	1026	7055	2700	46	11:55:43.9	01	12.0
909	BEACON	3C	18/ 0	1033	7055	2800	46	11:55:56.0	01	12.1
910	BEACON	3C*	17/ 4	1042	7055	2800	48	11:56:08.1	01	12.1
911	BEACON	3C	17/ 1	1054	7055	2800	52	11:56:20.1	01	12.0
912	BEACON	3C	16/ 6	1066	7055	2800	54	11:56:32.2	01	12.1
913	BEACON	3C	16/ 3	1077	7055	2700	50	11:56:44.3	01	12.1
914	BEACON	3C	15/ 7	1077	7055	2800	50	11:56:56.4	01	12.1
915	BEACON	3C	15/ 5	1062	7055	2800	48	11:57:08.4	01	12.0
916	BEACON	3C	15/ 5	1047	7055	2800	54	11:57:20.4	01	12.0
917	BEACON	3C	15/ 7	1033	7055	2800	54	11:57:32.4	01	12.0
918	BEACON	3C	16/ 2	1024	7055	2800	54	11:57:44.5	01	12.1
919	BEACON	3C	16/ 6	1017	7055	2800	54	11:57:56.5	01	12.0
920	BEACON	3C	17/ 1	1006	7055	2800	52	11:58:08.5	01	12.0
921	BEACON	3C	17/ 4	995	7055	2800	54	11:58:20.6	01	12.1
922	BEACON	3C*	17/ 7	984	7055	2700	50	11:58:32.6	01	12.0
923	BEACON	3C	18/ 3	976	7055	2800	54	11:58:44.6	01	12.0
924	BEACON	3C	18/ 5	963	7055	2800	48	11:58:56.6	01	12.0
925	BEACON	3C	19/ 0	953	7055	2700	52	11:59:08.6	01	12.0
926	BEACON	3C	19/ 5	948	7055	2800	52	11:59:20.7	01	12.1
927	BEACON	3C	20/ 1	946	7055	2800	52	11:59:32.7	01	12.0
928	BEACON	3C	20/ 6	949	7055	2800	54	11:59:44.8	01	12.1
929	BEACON	3C	21/ 2	954	7055	2800	52	11:59:56.9	01	12.1
930	BEACON	3C	21/ 7	959	7055	2800	50	12:00:08.8	01	11.9
931	BEACON	3C	22/ 3	968	7055	2700	54	12:00:20.9	01	12.1
932	BEACON	3C	22/ 3	984	7055	2700	48	12:00:33.0	01	12.1
933	BEACON	3C	22/ 2	1004	7055	2900	52	12:00:45.1	01	12.1
934	BEACON	3C	22/ 3	1022	7055	2800	52	12:00:57.3	01	12.2
935	BEACON	3C	22/ 3	1037	7055	2800	50	12:01:09.3	01	12.0
936	BEACON	3C	22/ 3	1056	7055	2700	28	12:01:21.4	01	12.1
937	BEACON	3C	22/ 3	1081	7055	2700	30	12:01:33.6	01	12.2
938	BEACON	3C	22/ 3	1087	7055	2700	42	12:01:45.7	01	12.1
939	BEACON	3C	22/ 4	1107	7055	2700	40	12:01:57.7	01	12.0
940	BEACON	3C	22/ 5	1124	7055	2700	48	12:02:09.8	01	12.1
941	BEACON	3C	22/ 6	1141	7055	2800	44	12:02:21.9	01	12.1
942	BEACON	3C	22/ 6	1158	7055	2800	50	12:02:34.0	01	12.1
943	BEACON	3C	22/ 7	1174	7055	2800	50	12:02:46.2	01	12.2
944	BEACON	3C	23/ 0	1188	7055	2800	48	12:02:58.2	01	12.0
945	BEACON	3C	23/ 2	1202	7055	2700	50	12:03:10.3	01	12.1
946	BEACON	3C	23/ 3	1221	7055	2300	54	12:03:22.4	01	12.1
947	BEACON	3C	23/ 4	1236	7055	2000	50	12:03:34.5	01	12.1

948 BEACON	3C	23/ 6	1250	7055	1800	48 12:03:46.7	01	12.2
949 BEACON	3C	24/ 0	1265	7055	1800	40 12:03:58.7	01	12.0
954 BEACON	3C	25/ 0	1334	7055	1900	48 12:04:59.2	01	60.5

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 QJM FLIGHT CHECK GRI ILS 07 NOV 95

SCAN	MSG	FLAGS	RNG	AZ	3/A	ALT	RL	TIME	PORT DELTA
955	BEACON	3C	24/ 7	1347	7055	2100	54	12:05:11.3	01 12.1
956	BEACON	3C	24/ 6	1361	7055	2300	54	12:05:23.4	01 12.1
957	BEACON	3C	24/ 7	1374	7055	2300	54	12:05:35.5	01 12.1
958	BEACON	3C	25/ 3	1380	7055	2400	52	12:05:47.6	01 12.1
959	BEACON	3C	25/ 6	1375	7055	2300	52	12:05:59.6	01 12.0
960	BEACON	3C	25/ 6	1365	7055	2200	52	12:06:11.6	01 12.0
961	BEACON	3C	25/ 5	1355	7055	2100	52	12:06:23.7	01 12.1
962	BEACON	3C	25/ 3	1346	7055	2000	52	12:06:35.7	01 12.0
963	BEACON	3C	25/ 2	1338	7055	1900	40	12:06:47.7	01 12.0
964	BEACON	3C	25/ 1	1330	7055	1700	30	12:06:59.7	01 12.0
965	BEACON	3C	24/ 7	1325	7055	1700	18	12:07:11.7	01 12.0